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# REPORT

OF THE

New York (State) Legislature, Senate

## SELECT COMMITTEE

242

APPOINTED TO

## INVESTIGATE THE HEALTH DEPARTMENT

OF THE CITY OF NEW YORK.

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Transmitted to the Legislature February 3, 1859.

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# STATE OF NEW YORK.

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No. 49.

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IN SENATE, FEB. 3, 1859.

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## REPORT

### Of the Select Committee appointed to investigate the Health Department of the City of New York.

Mr. Ely from the select committee appointed under the amended resolution of the Senate, of the 3d of April, 1858, in the following words, to wit:

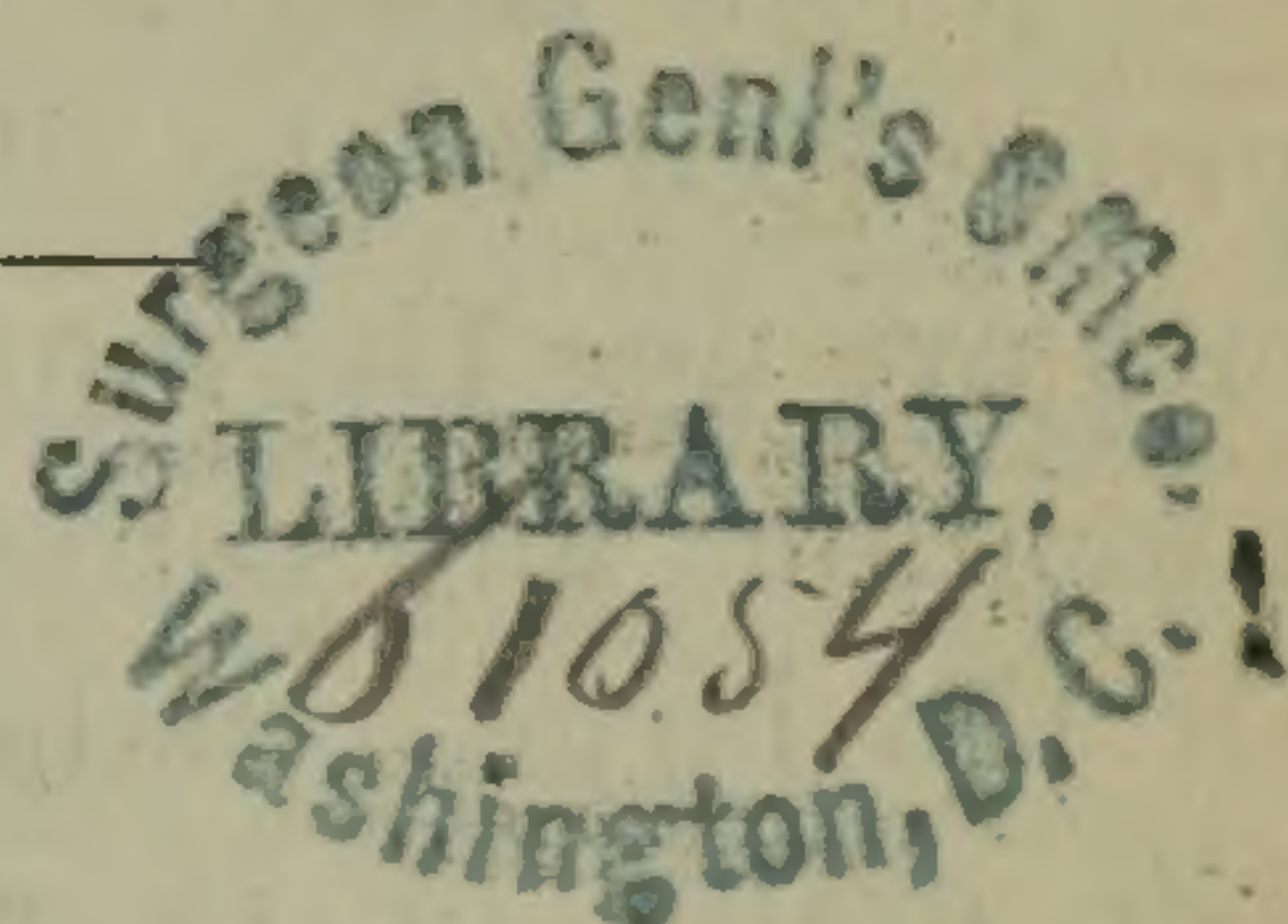
*“Whereas, Various applications have been made to the Legislature, based upon the assertion that great defects exist, and great improvements are practicable in the health department and sanitary laws of the city of New York, therefore*

*“Resolved, That a committee, consisting of the Senators from the city of New York, [and Mr. Brandreth,] be appointed to make an examination of the health department of the city of New York, and report the same to the [next] Legislature; and, also, if any and what legislation is requisite and necessary to increase the efficiency of such department,”*

Ask leave to submit the following

## REPORT:

The committee entered upon the duty confided to them with a full knowledge of the labor it imposed and the consequences which would attach to any action they might deem it advisable to recommend to the Legislature. As the result to be attained must necessarily affect the general welfare of a large community, irrespective of individual interests, they determined to make their investigation as free and broad as possible. It was therefore not deemed expedient to issue subpoenas or administer oaths to the





persons called upon to make statements or to give testimony. Printed notices were issued to all who were supposed to possess information which could be useful to the committee, and the time and place for holding their sittings were made known through the public prints, to the end that all parties feeling an interest in the subject under examination might voluntarily appear and freely submit their views. To secure an accurately detailed account of their proceedings, the committee at their first session appointed a secretary to act as clerk, a sergeant at arms and a stenographer. Their public sessions were held in the room at the City Hall appropriated to the library of the corporation, and acknowledgments are due the municipal authorities for the gratuitous use of commodious and convenient accommodations.

Of the large number of persons invited to give information, either orally or in writing, twenty-eight responded; of whom twenty are members of the medical profession, comprising some of our most eminent and respected physicians and surgeons in active practice and of large experience.

It was not the purpose of the committee, in the course of their examination, to impeach the conduct of any functionary of the city government; their object was to deal with systems and the operations under them, in the hope that existing errors might be discovered and corrected, and imperfections removed. Portions of the testimony, however, pointed so directly to the city inspector's department that the committee felt it incumbent on them to allow the fullest range to Mr. Morton, the incumbent of that office, in the explanations and statements submitted by him. The testimony on this branch of the subject under examination, is very full and will convey to the Legislature all that can be said for and against the existing organization and management of that department of the city government.

At an early day after the commencement of the investigation, the committee invited a conference with the experienced chief magistrate of the city; and frequent interviews were had with that officer on the various questions before them. The recorded testimony was placed in the hands of Mr. Tieman, for examination, and the committee have the satisfaction of believing that the views expressed in this report are in accordance with those entertained by him.

To give proper form and method to the information sought to be elicited from competent witnesses, the questions were propounded under three general heads:



*First.* As to the alleged fact that the city of New York in proportion to its population, has a higher ratio of mortality than other large cities in this country and in Europe.

*Second.* If the alleged fact be established, to what general causes is the excess of mortality to be ascribed, and

*Third.* What remedies can be suggested for the removal of so great an evil.

There can be no question that under the first head the affirmative is fully established. The testimony is clear and conclusive, verified by statistics that have not been successfully invalidated.

Under the second head, the causes of excessive mortality are mainly attributed to the over-crowded condition of tenement houses; the want of practical knowledge of the proper mode of constructing such houses; deficiency of light; imperfect ventilation; impurities in domestic economy; unwholesome food and beverages; insufficient sewerage; want of cleanliness in streets and at the wharves and piers; and finally, to a general disregard of sanitary precautions; the imperfect execution of existing ordinances, and the total absence of a regularly organized, efficient sanitary police.

Under the third head, many valuable suggestions will be found in the testimony, and such as were deemed judicious and feasible are embraced in the recommendations of this report.

Notwithstanding the alarming facts stated in the testimony, and which would almost sanction the idea that the city of New York was universally in an unhealthy condition, yet the committee have ascertained from reliable evidence that there are several remarkable exceptions to what might be deemed the general rule. There are localities in the city in which the sanitary condition of the inhabitants is not surpassed by the healthiest portions of any other city. In support of this opinion the following tables are given in the testimony of the city inspector, to whose general views on this branch of the subject the committee desire specially to refer. While they substantiate the leading positions assumed in this report, they show conclusively that under proper management, New York may become in whole, as well as in part, one of the healthiest cities in the world:

Wards.	Population.	Deaths in 1856.	Deaths in 1857.
1, -----	13,486	641	614
2, -----	3,249	130	150
3, -----	7,909	178	279
4, -----	22,895	752	712



Wards.	Population.	Deaths in 1856.	Deaths in 1857.
5, -----	21,617	894	953
6, -----	25,562	1,089	855
7, -----	34,442	1,266	1,229
8, -----	34,052	1,038	1,014
9, -----	39,982	931	962
10, -----	26,378	832	871
11, -----	52,979	1,536	1,447
12, -----	17,656	951	1,022
13, -----	26,597	1,056	1,189
14, -----	24,754	881	1,029
15, -----	24,046	436	345
16, -----	39,823	1,153	1,225
17, -----	59,548	1,987	1,998
18, -----	39,415	1,197	1,246
19, -----	17,866	901	1,289
20, -----	47,055	1,695	1,918
21, -----	27,914	1,204	1,778
22,* -----	22,605	910	1,208
Total, -----	629,830	21,658	23,333

These tables, by a careful analysis, exhibit the following comparative ratio of mortality between the most salubrious and the most unhealthy wards of the city :

Wards.	Popula- tion.	Ratio of mortality 1856.	Ratio of mortality 1857.	Wards.	Popula- tion.	Ratio of mortality 1856.	Ratio of mortality 1857.
15,	24,046	55.12	69.68	1,	13,486	21.04	21.96
9,	39,982	42.94	41.56	6,	25,562	23.47	29.89
				13,	26,597	25.20	22.36
	<u>64,028</u>				<u>65,645</u>		

In examining these results some allowance must be made for fluctuations in the amount of population, but in the main they are believed to be sufficiently reliable as a basis for calculation. The contrast of mortality which they present must arrest public attention. Of those above selected for comparison, in the most unhealthy ward in the year 1857, one person died in every 21.96; while in the most healthy ward in that year, only one died in every

\* The increase of mortality in this ward, in the year 1857, is probably to be ascribed to a large increase of population in that ward during the last two years.—*Note by the committee.*



69.68. The reasons for this striking contrast will be found stated in the testimony.

In determining the ratio of mortality to the population in the various wards, there is one element affecting it which if overlooked, would lead to a serious error. This is, that from several of the wards, and these the most insalubrious, large numbers of persons who are taken sick in their homes are removed to hospitals and infirmaries in other wards, of which in case of death they unduly swell the mortality, while they apparently diminish that of the wards from which they had been removed. It is but just to observe that the wards which suffer most in their reputation for health from this consideration, are the twelfth, nineteenth, and twenty-first, within which are embraced most of the class of institutions referred to.

In the ninth and fifteenth wards, the inhabitants mostly live in comfortable and airy dwellings. There are very few tenement houses, and families are not crowded together as in other less favored districts. The cellars are generally dry and well sewered and even the domestics occupy comfortable sleeping apartments above ground. In short, the salubrity and consequent local advantages for private residences of some of the wards of the city, and especially where the march of improvement is most rapid, are unsurpassed in any city on this continent, and are in perfect accordance with the general healthfulness of our climate, and the meteorological character of that happy portion of the world's surface we inhabit, in which we find the greatest amount of health, the greatest success of industry, and the largest area of constitutional liberty.

What the committee then would desire to accomplish by their recommendations to the Legislature, is, that the city of New York shall be secured in every part alike, in the means of preserving the public health; and that the blessings of light and sunshine, and pure air shall be equally enjoyed by all its people, under the wise provisions of suitable laws.

The fact cannot be controverted that many hundreds of thousands of dollars are annually bestowed by law or voluntary humane associations, for the cure of diseases in the city of New York, the existence of which could be entirely prevented by proper sanitary regulations. The excessive mortality which we seek to remedy, unless some effectual action takes place speedily, must continue steadily to increase, and for natural reasons incident to the po-



sition of the city, which is limited in accommodation, while the population is constantly enlarging its numbers.

A seaport open to every breeze from the waters, welcoming ships from every clime, the city of New York is the key of the greatest inland trade in the world. But its superficial extent is limited. It is, nevertheless, destined to contain millions of inhabitants, and it becomes therefore an imperative question for its rulers to determine how and where its people are to find dwellings within its bounds. Its population under existing regulations must crowd each other far more than even at present, where may be found *thousands of persons* crammed into a single block of tenement houses. How important then is it that due provision should be made in season, to guard against the farther inroads of disease and death, resulting from causes within our control.

The present is the time, while at least one-half of the island remains to be built upon, to accomplish this beneficent work, and to secure beyond doubt or accident the permanent reduction of the mortality which is now so startling. Wise sanitary regulations may, under Providence change the whole character of the future New York, and the Legislative bodies which deliberate so earnestly over immaterial issues, should reflect on the serious responsibilities which attach to them, when such a state of things as is presented in this report calls upon them for wise, prompt, and active interposition.

The importance of whatever affects the sanitary condition of a community numbering three-fourths of a million of souls, will readily be admitted, and the urgent necessity for such an investigation as the Senate entrusted to this committee is fully established by the testimony herewith submitted. It is demonstrated beyond all reasonable question, that in the great city, whose progress in the material elements of prosperity astonishes not only ourselves, but the world, death is making an alarming inroad upon its population, and that the average yearly mortality is far beyond its due proportion. There are annually cut off from it by disease and death, enough human beings to people a city, and enough of human labor to sustain it. Individual resistance to this mortal foe is entirely in vain. Hospitals, institutions of charity and benevolence, dispensaries and relief societies abound in the community, but they exert themselves hopelessly to arrest the evil, since the maladies for which they offer assistance arise from causes over which they have no control.

Great cities are certainly the pride of nations, but they require



a paternal control, and all christian and civilized communities recognize the duty of exercising it. The difficulty has mainly been in devising the mode of using this power judiciously, so as not needlessly to place restraints upon personal freedom. The aid of science must sometimes be invoked to strengthen and direct the hand of government, and to guide legislation in the duty of providing remedies for existing evils. A due regard for the public health of populous and growing cities calls loudly for the practical application of scientific principles, resulting from investigation into the causes of increased mortality and of the best modes of prevention. Such investigations are constantly in progress, and it is not the part of wisdom to reject the counsels which they offer. It is but recently that public attention has been drawn to the direct effects of light; the true character and influence of the solar ray and its chemical and healthful action, apart from its sensible heat. So also in regard to ventilation, and the introduction and diffusion of heat in dwellings. Great progress has been made of late years in reference to these subjects, and the skillful architect of the present day readily avails himself of the knowledge which was denied to his predecessors. A vast debt is due to science for such discoveries. Humanity finds in them practical and reliable agents for good.

But nature is full of remedial energies of its own, if we were ready and disposed to take advantage of them. The chemist, the pharmaceutist and the surgeon would be spared much of their most painful duty if we could be brought to rely more upon wholesome air, direct sun light and pure water. The city of New York, thanks to some of its intelligent, energetic and philanthropic citizens, enjoys the advantages of the latter blessing in bountiful profusion. A healthful river flows beneath its streets and avenues, supplying every habitation with sufficient water to allay thirst, to prepare food and to promote cleanliness. The island on which it stands is laved by two noble rivers, whose tides uplift and cleanse the respective streams. Its sewerage is advancing with rapid stretches from street to street, and the fresh breezes from the ocean temper the coldness and moderate the heat of its climate.

And yet, notwithstanding all these advantages, the mortality of the city is far beyond its proper ratio, and is constantly increasing. The rate of deaths, as appears from carefully prepared statistics, for the last seven years, is greatly in advance of former stated periods. The causes for this excessive mortality are mainly



attributable to the rapid and steady increase of the population without a proportionate advance in the scientific application of sanitary precautions and remedies. Among the causes are, the imperfect cleaning of the streets, and the rapid increase of tenement houses, badly constructed, imperfectly ventilated, insufficiently drained into the sewers, and impervious to the light and heat of day.

It will appear from the evidence that the most glaring nuisances are permitted to remain unabated during the hottest months of summer, embracing large deposits of festering excremental matter in close proximity with the public markets, and that the public health is constantly endangered by the condition and inadequacy of the water closets in the houses of the poor, the filth of the gutters, the stagnation of water on vacant lots, and the crowded condition of the dwellings occupied by the laboring classes.

Whatever local regulations exist in regard to these subjects, they are but imperfectly enforced, and it is unquestionably the duty of the State, which is the competent authority, to adopt without delay some change of system which will meet the exigency of the case. The health department at present organized as a branch of the city inspector's office, does not accomplish the object for which it was established. The committee recommend, therefore, that the health department be disconnected with said office, and that the present organization under that name be abolished. In devising a suitable and efficient substitute, they have kept in view what they regard as properly the distinctive features of this branch of the city government:

*First.* Whatever relates to the sanitary affairs of the city, the causes, prevention and cure of diseases in all persons brought under the public care, and the protection of the community at large from the effects of disease resulting from violation of sanitary laws; and,

*Second.* All duties which now are or may hereafter be devolved on the city inspector, of a character different from the above stated.

The duties under the first branch they propose to confide to a new board to be called the "Board of Health," with an executive officer under the title of Superintendent of the Public Health, with a subordinate sanitary officer in each ward of the city. The "Board of Health" to be composed in part of members of the medical profession; the Superintendent and his assistants to be qualified practitioners of medicine, competent to detect disease



and to apply the remedies. The duties comprised under the second branch it is proposed to leave in charge of the city inspector.

A glance at the details of this subject will at once show the propriety of the conclusions to which the committee have arrived.

The "City Inspector's Department" now embraces within its functions four several and distinct spheres of duty:

*First.* It has the care and supervision of the public health, including the inspection and removal of nuisances, the control and prevention of disease, the registration of births, marriages and deaths; and its chief officer is, moreover, one of the commissioners of health, and an official adviser of that body in all matters pertaining to the public health.

*Second.* It has the charge of the cleaning of the streets of the city, including the employment of laborers, the selection and supervision of dumping grounds, the sale of manure, and other matters pertaining thereto, of a financial character, to the extent of from \$300,000 to \$400,000 annually:

*Third.* It has the regulation and management of the public markets, eleven in number; and:

*Fourth.* It is charged with the duty of the inspection of weights and measures.

It is plain that the first of these multifarious obligations, the supervision of the public health, involving the preservation of the people's lives by the discovery and suppression of preventible diseases, is the most important and serious that can engage the attention of the officers of the department in question. Embracing, as it does, the great subject of public hygiene or sanitary science, in view of the health and lives, not only of the 750,000 persons which constitute the probable present population of New York city, but also of the future millions by whom the island of Manhattan is destined to be inhabited, making it the chief city of the world, this subject is too grand, too far reaching, too vital, to be subjected to any diversion, or to be encumbered with any extraneous matters whatever.

The evidence adduced before the committee has convinced them, as they think it will convince any one who reads it, that preventive medicine, rising rapidly to the perfection of a science, is capable of exerting a vast influence over the welfare, physical and moral, of the human race; and the committee are also well convinced that for want of the application of the precepts of this science to the local management of the city of New York, it has suffered incalculably in these respects.



The duties of a health department in such a city as New York, if properly constituted and arranged, would possess a magnitude and importance sufficient to occupy the time and talents of the best educated men to be found in the ranks of the medical profession. None other than such should be entrusted with so delicate and responsible a service; none other can perform it with proper efficiency, and when selected they should be relieved of every extraneous duty.

The public health department of such a community should stand alone; it must stand alone, in its responsibilities and labors; and it is a manifest absurdity, wrong in principle as it will always prove injurious in practice, to place in the same hands such an incongruous variety of occupations, all, or nearly all, of an onerous character, as we find combined in this one department as now constituted. It is impossible that duties so incompatible with each other and so extensive can be efficiently supervised and directed by a single head, for the first one enumerated alone requires the study of years so to inform and perfect the mind as to enable it thoroughly and properly to understand and appreciate the multifarious features and bearings of so vast a subject.

Such is the practical experience of many large cities of the world whose condition has been brought to our attention; indeed we are unable to point to a single exception to the rule. In London, Liverpool, Edinburgh, Paris and other European cities, as well as in Boston, Providence, Philadelphia, and other places in the United States, the health departments are so constructed as to be entirely separate and distinct in their functions from all other branches of government; and they are so arranged as to call into the public sanitary service, the most eminent talent of that profession, which alone takes knowledge of the science of public health.

The wisdom of this arrangement is not only apparent at first sight, but it is made evident by its results. The committee find from documentary and other reliable sources, that the "mortality of London during the last ten years has averaged one in forty of the population. In 1856 it was one in forty-five. In Philadelphia, in the same year, it was one in 44.5. In Providence, R. I., it was one in 55.7 in 1857, and one in fifty in 1858. In Boston, one in forty."

"In all these cities the best medical talent is employed to protect the public health; while in New York city, where this idea



is practically discarded, the result is exhibited by the following statistics, showing the ratio of its mortality to the population at each census period for the last 50 years :

Years.	Deaths.	Population.	Ratio of deaths to population.
1810,-----	2,073	96,373	1 in 46.46
1815,-----	2,405	100,619	1 in 41.83
1820,-----	3,326	123,706	1 in 37.19
1825,-----	4,774	166,086	1 in 34.78
1830,-----	5,198	202,589	1 in 38.97
1835,-----	6,608	270,089	1 in 40.87
1840,-----	7,868	312,710	1 in 39.74
1845,-----	9,886	371,223	1 in 37.55
1850,-----	15,377	515,394	1 in 33.52
1854,-----	28,568	-----	1 in 22.05
1855,-----	23,042	629,810	1 in 27.33
1856,-----	21,263	-----	1 in 28.67
1857,-----	23,196	-----	1 in 27.15."

The committee might quote many examples of the influence of sanitary science, in advancing the health and saving the lives of the people, and of the destruction of both by its neglect; but a single one will suffice :

"So great was the degradation, filth and pollution of London, less than 200 years ago, (1665,) when its population was no larger than that of New York at the present time, that besides twenty-eight thousand deaths by ordinary diseases in one year—one in twenty-four of the population, and five thousand more than in New York last year—there were lost also *sixty-eight thousand lives by the plague*. The proportionate mortality of London *now*, is one in forty-five, while that of New York is nearly as great as was that of London two centuries since, being one in twenty-seven in the year 1857, whereas fifty years ago it was better than that of London now, viz, one in forty-six and a half.

"Thus the condition of these two cities is completely reversed, and we are at no loss for the reason."

The document from which the preceding paragraphs are taken—Report of the Board of Supervisors of New York, March 30, 1858,—concludes with the following resolution, which was subsequently adopted and ordered to be transmitted to the Legislature :

"*Resolved*, That in the opinion of this Board, an imperative necessity exists for such improvements in the details of the city inspector's department, and in the qualifications of its executive sanitary officers, as are dictated by the modern progress of science; and that a legislative enactment to this effect would add greatly



to its usefulness and efficiency, and meet with the approval of the great body of our fellow citizens."

As a further expression of the sentiment of the public authorities of the city of New York, those who best know its wants in this respect, we quote the following paragraph from the published "Report and proceedings of the Sanitary Committee of the Board of Health, in relation to the cholera, as it prevailed in New York in 1849," of which committee His Excellency E. D. Morgan, the present Governor of the State, was an active and efficient member, and is among the signers of the report :

"The labors of your committee during the past appalling season of sickness and death, and the awful scenes of degradation, misery and filth, developed to them by their researches, have brought into full view the fact that *we have no sanitary police worthy of the name*; that we are unprotected by that watchful regard over the public health which common sense dictates to be necessary for the security of our lives, the maintenance of the city's reputation, and the preservation of the interests of the inhabitants. Cholera may again assail us before we know it, and it is the dictate of true policy to be prepared in season to meet it; and not cholera alone, but any and every other malady which may be produced or aggravated by local causes. To no other work should the authorities address themselves more earnestly than the *establishment of a thoroughly organized medical police, at whose head should be an active and experienced medical man*. The advantages of such a measure would be incalculable." Pages 36, 37.

With these facts before them, the committee have no hesitation in expressing the opinion, that the department which has the supervision of the public health in the city of New York, should be entirely separate from all others, and unincumbered with irrelevant duties and responsibilities; that it should be placed on a more solid and independent basis than the ordinary divisions of the government; that as far as legislative enactment can accomplish the object, its head should be a thoroughly competent sanitarian, and the tenure and emoluments of office such as to insure the greatest skill, devotion and efficiency.

Under such arrangements as these, the committee are of opinion that the most salutary results would follow; that the estimate which has been made of *thirteen millions of dollars*, as the cost of avoidable sickness and death, and the unnecessary loss of *five thousand lives* per annum, might be prevented, with an effect upon



the happiness and morals of the people which can neither be reckoned in figures nor expressed in words.

The next important consideration relates to the construction of houses intended for the dwellings of the industrial classes, and the necessity for securing as far as practicable the following results:—

A direct communication with every inhabited room, with a chimney connected with each by means of fire places or ventilating wheels; windows directly admitting the light and heat of the sun; laundry utensils and water closets connecting with pipes draining into the sewers; cellars admitting light and being free from dampness; economical ranges or stoves for cooking, and a given space to be appropriated to each inhabitant.

It is believed that the prevalence of these features in the class of houses mentioned, would be found as beneficial to the landlords as to the tenants; for experience has shown that in consequence of the present defective arrangements in all these particulars, in most of these houses in the city of New York, the tenants, or a large portion of them, are so constantly in ill health as to be unable to perform the labor they are qualified for and willing to undertake. Disabled as they are by disease produced by a poisonous atmosphere, the want of light and air, and the too frequent contact with filth, their reduced earnings are absorbed by medical expenses; the landlord loses his rent, and too often the alms house and Potter's Field become their last homes. The committee trust that these consideration, addressed even to the cupidity of speculators in dwellings for the poor will not be overlooked, for it is clear that a large portion of the pauperism as well as the mortality of the city must be attributed to the wretched manner in which its poor are lodged. The crowded apartment, the want of light and air, the identity of the kitchen and the sleeping room, the damp and dark cellar, all unite in depriving such a residence of all the elements of domestic comfort and happiness; and when to them is superadded the inroads of pestilential disease, it can scarcely occasion surprise that the moral character of the tenants gives way under the pressure of want and misery, that some yield to intemperance and others to crime, or that the children of parents thus situated are driven to the streets for an ill gotten livelihood.

It is maintained, however, by some practical observers, that no sanitary regulations will have effect with a large class of poor tenants, and that in the city of New York there are benevolent societies which furnish constant relief to their dependants, upon



the consideration, mainly, that they will keep their apartments and their persons in a cleanly condition, while it is well known that even this requisition is carried out with the greatest difficulty.

Yet notwithstanding these views, the community have the undoubted right of self protection against diseases superinduced by unhealthiness; for it is undeniable that an impure atmosphere and a local malaria convey their mischief on the wings of the wind. It is due therefore to every consideration of public health and the general welfare, that the dwelling houses erected for the poor shall not increase and disseminate the evils attending the condition in life of that unfortunate class of our people who occupy them.

The startling facts elicited on this latter subject in the course of this examination, are not new to those who have heretofore given it their attention, nor have they been withheld from the notice of the public authorities. In addition to the extracts already given from public documents on the first branch of the question under discussion, the committee deem it advisable to extract the following passages from a report made to the "Association for Improving the Condition of the Poor," in the year 1853, and which forcibly illustrates and sustain their views in regard to the class of buildings known as tenement houses:

"The subject, though specially referring to the laboring classes, deeply concerns our citizens generally. For aside from the sympathy which the sufferings of our fellow-citizens and neighbors should excite, all, whatever may be their social position, have a personal interest in the sanitary condition and morals of the community in which they live. By providing the laboring classes with better tenements, improved ventilation, and healthy and cleanly arrangements in respect to yards, sinks and sewerage, they will certainly suffer less from sickness and premature mortality, and a vast amount of pauperism, crime, and wretchedness be prevented. On the other hand, it is a well established fact, that diseases are not confined to the localities where they originate, but widely diffuse their poisonous miasma. Hence, though the poor may fall in greater numbers because of their nearer proximity to the causes of disease, yet the rich, who inhabit the splendid squares and spacious streets of this metropolis, often become the victims of the same disorders which afflict their poorer brethren. Nor should the momentous fact be overlooked, that the same causes which occasion a great amount of physical suffering to the laborer, and a high rate of mortality, at the same time impair his ability for self-support, increase taxation, and present almost insuperable obstacles to his social elevation, and moral and religious improvement. It would appear, therefore, that to place within the reach of the humblest in the community the elevating



influences of healthy and attractive homes, is an object not only deserving the special attention of our city government, but which should be regarded as one of the most interesting and useful efforts of benevolence."

\* \* \* \* \*

"The resident poor in the first ward have doubled since 1846; and, according to the estimate of the missionary, there are now within its limits, of that class needing relief, not less than *ten thousand persons*. Yet it has not been found, that any special provision of tenements has been made for this mass of indigent population.

"In the upper wards, there are some habitations for the laboring classes, where their wants and comforts have been regarded, and in which it is possible to maintain the decencies of life. Generally, however, they are inferior in size and structure to those already considered. Crazy old buildings—crowded rear tenements in filthy yards—dark, damp basements—leaky garrets, shops, out-houses, and stables converted into dwellings, though scarcely fit to shelter brutes—are the habitations of thousands of our fellow-beings, in this wealthy Christian city."

\* \* \* \* \*

"But the most objectionable habitations are the cellars, in some instances six feet under ground—which have to be baled out after every rain storm—and are so damp as to destroy health—so dark as to prevent industry—and so low that ventilation is impossible. Though utterly unavailable for any other use, they are rented at rates which ought to procure comfortable dwellings, to persons who have become as debased in character, as the condition is degrading in which they live."

The following extract from the annual report of the same society, for the year 1857, will show that in the four years which had elapsed since the former report, the evils referred to had not been removed:

"But if some of the numerous causes of poverty and wretchedness are fairly attributable to the follies or vices of the poor, there are others of a different nature which from their importance deserve special consideration. Of this class are—

1. Defective dwellings,
2. Cellar residences,
3. Insufficient sewerage and drainage,
4. Filthy streets,

and others which cannot be embraced in this work.

The board being profoundly impressed with the truth, that no real or permanent amelioration of the condition of the poor in this city can be effected, but with the removal of the abovenamed evils, they feel called upon to give them greater prominence than they have hitherto received. These evils in the aggregate are very formidable, and of a kind which it is impossible for the poor



and laboring classes themselves to remove; and as it will subsequently appear, that they seriously impair, not only the comfort, health, and morals of the poor, but to a greater or less extent the health, morals, and general interests of the community; the duty of efforts to effect their removal, is too obvious to be disputed. The Board, therefore, offer no apology for introducing them into this report, as they come directly in the line of its chartered objects, which are "To improve the moral and *physical* condition of the poor."

From the report of the same society, for the year 1857, the committee extract the following passage, for the purpose of preserving an interesting table, which illustrates, in an international aspect, the subject under discussion. It presents the question which so deeply affects the welfare and the reputation of the city of New York, in a point of view that ought to fix the attention of every intelligent citizen. While as a nation we rank first, in regard to health, among nine of the great nations of the earth, yet as a city, our vaunted metropolis stands last, in this respect, among eight of the populous cities of the world.

"The people of the United States are, probably, the healthiest in the world. The annual deaths are one and one-half per cent of the population, whilst the ratio of deaths in this city is about the average of most European cities. The following tabular exhibit of the annual mortality in some of the principal countries and cities of Europe, will illustrate and confirm the statement:

" The mortality of London	is 25 in 1,000.
"       Berlin	is 25 in 1,000.
"       Turin	is 26 in 1,000.
"       Paris	is 28 in 1,000.
"       Genoa	is 31 in 1,000.
"       Lyons	is 33 in 1,000.
"       Hamburg	is 36 in 1,000.
"       New York	is 38 in 1,000.

"The mortality of different countries is:

"In the United States	15 in 1,000.
In England	23 in 1,000.
In Denmark	23 in 1,000.
In France	23.5 in 1,000.
In Holland	24 in 1,000.
In Sweden	24 in 1,000.
In Prussia	28 in 1,000.
In Austria	31 in 1,000.
In Russia	36 in 1,000.

"If, therefore, the ratio of mortality is any criterion of the condition of the laboring classes, which constitute a large proportion of the population, then our tables of mortality show that there are few cities where the improvement of the physical state



of the inhabitants is more needed than in our own. We have no statistics of wretchedness, such as have been officially gathered up in some European cities; yet it is not the less certain that New York suffers as much, if not more, from a disregard of sanitary economy, and what may be termed the science of common life, than, probably most European cities."

The whole of this question was presented to the Legislature, at great length and with marked ability, in the report of a select committee of the Assembly, document 205, March 9, 1857. The facts and arguments which it contains are well deserving of a careful consideration. The committee extract the following passages from that report, for the purpose of showing to what a magnitude this evil has grown:

"Now, in the building heretofore mentioned as Manhattan place, there are ninety-six apartments, and they were inhabited, when visited, by *one hundred and forty-six* families, numbering in all *five hundred and seventy-seven* persons. Computing this aggregate of tenantry by the area of space occupied, we find an average of *six* persons to a room of 12 by 10 feet in dimensions. Out of *seventy-six* houses examined in one district, (the 10th,) the average number of persons occupying them was *seventy* to a house, or *eight* to a room 12 by 14 feet square. In one block or series of buildings visited, *two hundred families*, (averaging *five* persons to a family,) were confined, without ventilation, proper light, or conveniences for obtaining water. In another building examined, *eighty-five* apartments contained *three hundred and ten* persons, and all the rooms were not rented. If such aggregations of human life, amid filth, vermin, disease and destruction, may not be aptly termed "laboratories of poison," there is no fitting term whereby to designate them.

"Hundreds of the miserable occupants of these establishments dwell in cellars, over five feet, as we have noticed, below the street level. In many parts of the city, on sunken lands, and where the sewerage is incomplete, these underground rooms are sometimes submerged by the drainage of heavy rains. In some, this annoyance is constant, and the bricks or wooden floors, (where flooring remains,) are continually oozing with mouldy damp. Constant rheumatic affections, hip complaints, and affections of the bowels, are prevalent among the occupants. Instances have been known of the confinement of females on beds raised by a few bricks from the water which flooded the floor beneath. Is it surprising that thousands of children die at the earliest period, in such wretched holes and burrowing places?

"The quantity of air consumed by the lungs of a human adult in a minute is half a cubic foot. At least a dozen times this amount is required at the same time to permeate the system, after performing which function it becomes corrupt, and is emitted in the form of carbonic acid gas, a poison. How long will it require for



five or six persons, in a room twelve feet square, to consume all the vitality of the air within it, supposing that vital air had ever entered such a place? Not more than half an hour. And all the air breathed thereafter by the five or six persons, while they remained in the room, with doors closed and without ventilators, would be what they had previously exhaled; in other words, they would breathe poisoned air over and over again. Apply this computation to a tenant house, containing from two hundred to a thousand persons, with exhalations from sinks, decaying matter and diseased bodies all around them, the whole hemmed in on all sides by high walks of a narrow court in a sultry summer's day, and can we wonder if typhus or yellow fevers, cholera or small-pox should visit the "laboratory" in search of ammunition?"—pp. 32, 33, 34.

The following passage appears as a note in the same report; and it is introduced here for the purpose of showing that in the judgment of a public officer, well qualified by position and experience to ascertain and declare the truth, the evils complained of do exist, involving imminent danger to the public health, and as a consequence, that a remedy ought to be provided:

"Mr. G. W. Morton, the present able and vigilant city inspector, says, in speaking of this subject: 'It is from the narrow streets, alley-ways and courts, that the poisonous gases, creations arising from accumulated filth and decaying vegetable and animal matter, are sent forth, and it is in these localities that death reaps his most abundant harvest. It is in such localities that the cholera originated in this city, and where experience has warned us every epidemic finds its greatest number of victims.' In reference to the tenant houses themselves, the city inspector expresses hope that the labors of this investigating committee and their results, will present such suggestions as will prove of utility to remedy the defects now existing."

The committee are of opinion that the reforms which they deem essential under this branch of the subject referred to them, may be effected by a judiciously framed code of city ordinances, imposing restrictions on the manner of constructing dwelling houses, and providing, also, for a salutary supervision over the conduct of occupants; and they propose therefore to confer on the city government adequate powers to accomplish those objects.

While the investigations of the committee have been mainly directed to that class of persons most endangered in health by the crowded condition of cities, they cannot overlook the fact that there are other serious evils of similar character, requiring immediate remedy, and to which other classes better situated in life are also constantly exposed. It is the want of proper ventila-



tion in those public buildings in which assemblages of people constantly convene in the performance of their civil, religious and political duties.

The court rooms of the city are proverbially unhealthy, and valuable lives have been sacrificed in consequence of the bad air which prevails in them during the transaction of public business. The offices attached to them are equally liable to objection, and even the churches during a crowded service, in many instances, are almost insufferable from the heat and impurity of the internal air.

These remarks are also especially applicable to many of the school houses of recent construction in cities, in which, from the neglect of all the known principles of sanitary science, neither good air nor a proper degree of heat can ever be preserved, and as a necessary consequence, the health of teachers and pupils is constantly endangered if not permanently injured.

The committee might go further and state it as their opinion, that many of the finest mansions of modern date, in the most admired avenues of the Metropolis, are constructed without regard to scientific ventilation and the proper introduction of light and heat. Thus the subtle poison of decomposed and unwholesome air is continually doing its work in the crowded city, characterizing the generality of its diseases, and plainly registering its effects in the bills of mortality. How far legislation can reach these cases must be left to the wisdom of the Legislature, but there can be no doubt that its action is not only desirable but necessary, in regulating the construction of those edifices which are erected for public purposes and at the public expense. Every life that is lost in these places is a reproach to a humane and enlightened community, and as science was never more active or certain than now, in pointing out what are the demands of health, and what laws affect the prolongation of life, and what the decrease of human physical infirmities, we are not without the requisite knowledge of the proper measures to be taken to add to the sum of human happiness.

The testimony and appendix to this report will be found to embrace facts and opinions from the most reliable sources open to the committee, and they desire that the whole should be read and carefully considered. In addition to the professional opinions and intelligent views of the most eminent of the medical practitioners, residing in New York, there will be found many valuable suggestions from men distinguished in other branches of



knowledge. The views presented by Doctor D. B. Reid, of Edinburgh, formerly a member of the health of towns commission, in England, are deserving of the highest consideration. In all that relates to the connection of the physical sciences with civil architecture, there is no higher authority than Dr. Reid, whose life has been devoted to the practical adaptation of the principles of science to the useful arts, and especially to those which affect health and human life.

Mr. Egbert L. Viele, a civil and topographical engineer of skill and experience, has submitted an interesting statement in regard to the original topographical formation of the island of Manhattan, in view of what he deems the urgent necessity of preserving a system of under-drainage in connexion with the natural water courses. The map which Mr. Viele has prepared in illustration of these views is admirably designed and executed, and adds force and effect to his suggestions. The committee trust that the statements of this competent engineer will receive the attention due to this important and little understood branch of the subject under notice.

A very useful paper accompanied by map and drawings, has been submitted by Messrs. Nowlan and Burke, civil engineers, proposing an improved mode of removing from the wharves and slips of the city the deposits of street manure and garbage discharged from the sewers, and which also prevent the currents of foul air from the sewers into the residences with which they connect. The committee were also favored with an ably drawn exposition of the present condition of tenement houses, and the evils resulting from their mismanagement, by Mr. A. J. H. Duganne, formerly a Member of Assembly, and the author of the report before referred to on the same subject. This paper is full of practical information in reference to the existing mode of constructing and occupying such dwellings.

The committee refer to these several portions of the testimony in the hope that its importance as a whole may attract the attention of the members of the Legislature, whose action is invoked in regard to measures which it affects.

The bill which accompanies this report embraces the general provisions which seem to be rendered necessary to enable the authorities of the city of New York to correct a fast growing evil. Much of their success under any legislation will depend on the spirit in which the duty devolved on them is discharged, and on the vigilance, capacity and fidelity of the functionaries employed



in the work of reform. This subject now deeply agitates the minds of the people of that city; and public sentiment calls loudly for the adoption of some active and efficient remedial measures. The committee have discharged their duty in presenting as concisely as possible their views as to the extent of the evil complained of, and the measures which promise the most immediate and effectual relief. It remains for the Legislature to take such action thereon as in their judgment is demanded by a due regard for the public good.

Respectfully submitted,

JOHN C. MATHER,  
SMITH ELY, JR.,  
RICHARD SCHELL,  
JOHN DOHERTY,  
BENJ. BRANDRETH.

ALBANY, *January* 31, 1859.







The committee met at the office of Hon. Richard Schell, Merchants' Exchange, N. Y., on Thursday, October 14, 1858, and organized by electing Hon. Smith Ely, Jr., Chairman, and appointing a clerk and sergeant-at-arms.

Notices were directed to be sent to several gentlemen, inviting them to appear before the committee on various days, to present their views and opinions in reply to the following interrogatories :

1st. Do you regard the condition of the health of this city as inferior to that of other large cities in this country or in Europe ?

2d. Are you prepared to assign reasons and causes, and to give authorities for your opinions on this subject ?

3d. Are you prepared to suggest remedies for existing evils in connection with the public health ?

In response to such invitations the following testimony and communications were, from time to time, received.

## \* TESTIMONY.

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### TESTIMONY OF DR. JOHN H. GRISCOM.

*Friday, October 22, 1858.*

On Friday, October 22d, 1858, the committee met for the purpose of hearing statements from medical gentlemen requested to appear before it, in answer to the general propositions already submitted.

Dr. JOHN H. GRISCOM was the first gentleman called upon for information. He proceeded to address the committee as follows :

Gentlemen—I have always esteemed this subject as one of the most important that can be legislated upon. I regard government as instituted for the protection of the lives of the people. Life is one of the first subjects mentioned in the Declaration of Independence as belonging particularly to the care of government—"Life, liberty, and the pursuit of happiness." I do not know what that means, if it is not the protection of the lives of the people against any approaches whatever, whether from internal or external causes of disease, or any other source that can be named. And as I believe that the strength of an individual depends upon his own health, so I believe that the strength of a State depends upon the health of the people who collectively compose it. Hence I have given to this subject, for many years, a great deal of attention ; I have studied it for several other reasons and considerations, and in a variety of ways. I have had correspondence with

\* This testimony was taken in stenographic short-hand, by William and Finlay Anderson, New York.



various parts of the world, and have had communication in various ways with numerous individuals. Thus I have gathered a great deal of material illustrating the condition and health of communities in various parts of this country and of Europe. But it is difficult to arrange this matter so as to present it in such a concise form, that those who are not accustomed to its investigation may see its whole bearing at a glance. A professional individual, of course, has it all arranged in his own mind, but it is difficult for him to present it in such a way that a non-professional man would see what he is particularly aiming at. But I suppose the best way is to take these questions *seriatim*, and illustrate my affirmative answer with what materials I have, presenting it in as condensed a manner as possible under the circumstances.

The first question is,

“Do you regard the condition of the health of this city as inferior to that of other large cities in this country or in Europe?”

Having answered this question categorically in the affirmative, I propose now to prove it. There are two ways in which the health of this city is to be estimated. One is by comparison with the health of other cities; and the other is by comparison with itself. I propose first to consider it in comparison with itself, at different periods. That is a very easy matter to do in one way: If we know the number of deaths in this city, and what its population is, it is very easy by the rule of three to ascertain what the proportion of deaths is to the population. The only difficulty in the way of settling that question satisfactorily, is the possible incorrectness of the census. We know precisely the number of deaths, for no dead body is allowed to be buried without a certificate. The only question therefore, is, Is the census of the population correct? There have been charges made against the census-takers, that they have not properly performed their duty, but I believe that the number which they record cannot vary much from the truth. It might, perhaps, vary 2,000 or 3,000, or even 10,000, but that would not make any essential difference in the calculation to which we are to devote our attention at present. Assuming it to be correct, I have a table here showing that the mortality of the city of New York has been increasing from the year 1804 to the year 1857 in a regular, almost a geometrical gradation. The increase has been nearly double. In 1810 it was one in 46 49-100—say  $46\frac{1}{2}$  of the population, while in 1854 it was one in 22 05-100. This is to be explained partly by the fact that in 1854 we had the cholera here. But look at the *actual* mortality! In 1850 there were but 15,377 deaths, while in 1854 there were 28,568, and the deaths by cholera in the latter year were only 2,509. Thus there has been an increase of 13,191 in four years, and how is that to be accounted for?

Mr. SCHELL—Does not the emigration to this country add very much to this increase?

A. I will explain that; it did not for that particular year. On the other hand the population was greatly reduced that year because so many thousand people fled the city; so that the actual proportion of deaths to the population was much greater than one in twenty-two; it was probably one in twenty or one in eighteen. Viewing it in any light, the mortality was very extraordinary at that time; and I doubt whether it was exceeded in any city in the world, even in New Orleans.

I have thus compared it with itself in that respect. Let us now enquire in this connection what this mortality arises from? The diseases of which people die are divided into two classes. *First*. Those that are due to external circumstances, unconnected with the individual or with his domestic circumstances. *Second*. Those which result from internal domiciliary causes.

The internal domiciliary causes of disease are those over which we have



entire control, which we can absolutely prevent, and which in many places of good sanitary condition never exist. Several of these I will mention; and I am sustained in this judgment by the assent of my associates in the profession, before whom I have presented the following tabular statement in the Academy of Medicine:

TABLE No. 1.

Ratio of Mortality to the Population in New York for each decimal period from 1804 to 1857.

DISEASES DUE TO DOMICILIARY CIRCUMSTANCES.	1804 to 1810.	1811 to 1820.	1821 to 1830.	1831 to 1840.	1841 to 1850.	1851 to 1857.
	One death in	One death in	One death in	One death in	One death in	One death in
Cholera infantum, .....	603	1,290	1,078	882	663	569
Cholera morbus, .....	11,000	4,500	8,300	9,300	7,424	5,887
Diarrhœa, .....	8,000	2,959	2,274	2,647	1,233	892
Dysentery, .....	2,743	898	1,106	2,077	815	893
Convulsions, .....	539	585	584	432	415	356
Erysipelas, .....	32,000	33,500	11,857	11,739	3,018	4,250
Dropsey of the head, .....	3,695	1,273	809	784	715	689
Marasmus and atroph, .....	960	1,800	932	982	690	450
Scarlatina, .....	19,200	50,000	3,320	954	1,671	736
Measles, .....	13,714	4,573	2,305	1,552	2,861	2,226
Whooping cough, .....	2,461	1,649	2,000	2,109	2,688	2,625
Pneumonia, .....	897	613	709	556	519	558
Phthisis, .....	210	165	207	201	218	236
Inflammation of bowels and stomach, .....	2,604	2,096	1,383	1,179	825	1,157
Scrofula, .....	24,000	10,000	13,883	13,500	5,800	4,436
*Premature and still births, .....	1,523	867	610	540	385	341

TABLE 2.

Whole number of deaths from Congestion of Brain.

From 1804 to 1819, inclusive, (15 years,).....	NONE
“ 1820 to 1838, “ (18 years,) .....	50
“ 1839 to 1852, “ (14 years,) .....	477
“ 1853 to 1855, “ (3 years,) .....	1,576

Cholera Infantum.—There is an increase of mortality from that disease of 250 per cent since 1820; that is the proportionate, not the absolute increase. This is a disease peculiar to cities.

Diarrhœa shows an increase of 100 per cent.

Erysipelas is well known to be a disease most peculiarly due to local circumstances, especially in the atmosphere of crowded hospitals, where effluvia of various kinds are emitted.

Mr. MATHER—The popular sentiment is the other way.

Dr. GRISCOM—It is mixed in that respect, but it does prevail in crowded and ill ventilated buildings, and it sometimes breaks out as endemic, for it one of that class of diseases.

Mr. SCHELL—Don't you think that the existence of defective pipes running to the sewers has the effect to produce erysipelas?

A. Of course, that is one of the sources of disease. It is due to the imperfect connection of the drain pipes.

Q. Is that the experience of the profession, too?

A. It is. They are said to experience that in London very much at the present time.

\* No premature births reported.



*Marasmus* is caused by foul air and bad diet.

*Scarlatina*.—There are circumstances which control the prevalence of scarlatina, which are purely meteoric; but in crowded and badly ventilated habitations the patient is almost sure to die. But where there are abundance of pure air and water, scarlatina is not a very difficult disease to treat.

Mr. SCHELL—It prevails mostly among children?

A. Almost all who have it are children.

Q. Hasn't swill milk some influence in producing it?

A. Its extension is principally caused by foul air.

Q. Don't you think swill milk has a tendency to help it along?

A. Oh, that is true, undoubtedly. It depreciates the tone of the body, and assists the diseases in their action. Impure diet aggravates every disease.

Q. But it has more effect upon children, because they have not arrived at that age that they can stand it?

A. Most unquestionably. Now, to show that there is some truth in all this idea of there being a great increase of mortality in those diseases which are preventable, allow me to read the results of a few diseases which are not preventable, which are due not to external circumstances, but simply to personal causes. You will find that the ratio holds the same with a different population, and if there is any variation, it is due to accidental circumstances, such as the condition of the person's hereditary predisposition, &c. The following is the statement:

TABLE 3.

*Ratio of mortality to the population of New York, for each decennial period from 1804 to 1857.*

Diseases not due to domiciliary circumstances.	1804 to 1810. one in	1811 to 1820. one in	1821 to 1830. one in	1831 to 1840. one in	1841 to 1850. one in	1851 to 1857. one in
Apoplexy, . . . . .	3,428	2,140	2,274	2,455	1,192	1,739
Epilepsy, . . . . .	16,000	25,000	18,444	14,209	9,763	13,405
Croup, . . . . .	1,078	1,162	1,170	1,579	1,606	1,115

In congestion of the brain, there is one of the most remarkable facts adduced, which astonished me, as it must astound every one who investigates the matter. (See Table 2.) Congestion of the brain is very much the same disease as water on the brain.

Mr. SCHELL—What is the cause of it, Sir?

A. It is a disease of infancy, and is caused by local, domiciliary circumstances—foul air, bad diet, &c. It ought to be classed with “dropsy of the brain.”

Thus I have compared New York with itself in different periods, by reference to the mortality of its population—its general mortality, and the mortality from particular diseases. If that is not enough to demonstrate the unsalubrious condition of the city, and that there are certain causes pressing upon the people which produce unnecessary sickness and premature death, to satisfy the committee, I am prepared to go further and convince them that New York is, to much extent, peculiar in this respect. There is some corroboration of this statement in the report made for 1857, of the leading statistics of the five Dispensaries of New York. The whole number of patients treated in those five institutions, in 1857, was 121,685. This is an amount of sickness which is in itself appalling; and yet it is among only one class of our population—the poorer—and only a portion of that class. These differ most from the particular diseases to which I have referred.

In regard to small pox, the tables show that the disease, which is well known can be entirely prevented, has been rapidly on the increase for many



years past. Look at the following table which I have prepared from the official records :

TABLE 4.

SMALL POX.

From 1804 to 1823, inclusive, the average number of deaths per an. was	45
“ 1824 to 1833, “ “ “ “	126
“ 1834 to 1843, “ “ “ “	184
“ 1844 to 1857, “ “ “ “	480
And in the first six months of the present year there were.....	425

This disease can be *eradicated*. We dispel it from our own families, because we are careful that our children are vaccinated, and many are accustomed to be vaccinated once in seven, or once in fourteen years. I infer that there were ten times the number of *cases* that there were *deaths*. Different institutions give us very different results of mortality from small pox. At the Small Pox Hospital, on Blackwell’s Island, the mortality has been 25 per cent, while at the Marine Hospital it has been only 4 per cent. I have taken what I estimate a fair average rate of mortality, in the city generally, and my professional friends agree with me that it is about 10 per cent, which gives us 4,250 as the number of *cases* in the first half of the present year. Small pox leaves its mark ; if it does not destroy life, it destroys beauty.

With reference to the comparison of New York with other cities I have a few returns which are remarkable. Let us go to London. London in 1665 had a population just about equal to what New York has now, or a little less perhaps. That year, London lost by the plague, nearly 70,000 people, and more than 30,000 besides by ordinary diseases. There were more than 100,000 deaths that year. But the *ordinary* mortality in London that year as I have said, was about 30,000, and ours in 1857 was 23,000, and while the mortality of London was worse from ordinary causes, it lost about 70,000 by the plague. It is impossible to conceive in what condition the residences of London must have been. This great mortality may be traced to underground residences, narrow and filthy streets, &c., though I consider the former the most potential cause. If you can imagine New York to be in such a condition, it will give you a very good idea of its sanitary state. But happily Providence interfered to save the city from a repetition of the terrible pestilence, by the great fire, which burned that very part of the city where the calamity had most prevailed, leaving scarcely a stick behind. Sanitary science was then unknown in London, but after the fire the authorities became aroused to the necessity of having better regulations, and in re-building the city ; the streets were made wider and much improvement was made in the domiciliary arrangements of the people, especially of the lower classes. Within the last 25 years it has taken a wider range, and investigations have been instituted by Dr. Playfair, Dr. D. B. Reid, (now of this city), and others. The population of London is now over two millions, and the mortality has greatly decreased in comparison with the population. The tables are completely turned both there and here, especially within the last ten years, but in reverse directions. The mortality of London during the past ten years was one in forty to the population, while in New York there was during the same period, an average of one to thirty. We have sections of New York which are very bad, but I suppose that few cities in the world can present a worse class of population than do some parts of London, although sanitary regulations have been carried into them. I mean the whole Metropolitan district which contains the two millions of people. The health officer of the city of London, Dr. Lethoby,



reports the mortality of all England as at the rate of 22.8 per thousand of the population, and in the city of London 22.3, so that there is a life in every two thousand of the population saved in favor of the city of London, and in the very centre of it.

MR. SCHELL—That is owing to the medical profession being large in the centre of London?

A. It is owing to the sanitary condition of the city being regulated better. The new health laws show what reforms have been instituted. There is there now a perfect sanitary system, conducted entirely by medical men. In 1856 the mortality in London was one in 45. In Philadelphia, for the same year it was one in 44.5. The Board of Health of Philadelphia have a very different system of government from what we have in the city of New York. There are several medical men in that Board. Providence, Rhode Island is shown to be one of the healthiest cities in the world; certainly the healthiest in this country.

The city of Boston is peculiarly well situated for drainage, &c., it being very hilly. The following table shows the influences of the different years from 1810 to 1839 upon the number of deaths in Boston, distinguishing the males from the females, and the still-born, and the proportion to the population:

TABLE 5.

Years.	Population.	Deaths.						Proportion to population.	
		Males	Females.	Diff'nce.	Total.	Still born.	Total.	One in	Per cent.
1811	34.255	373	375	—2	748	46	794	45	2.18
1812	35.230	286	347	—61	633	48	681	55	1.85
1813	36.264	416	334	+82	750	36	786	48	2.06
1814	37.269	367	328	+39	695	32	727	53	1.86
1815	38.274	407	433	—16	830	21	851	46	2.16
1816	39.279	440	433	+7	873	31	904	45	2.22
1817	40.284	453	422	+31	875	33	908	46	2.17
1818	41.288	486	439	+47	927	46	971	44	2.23
1819	42.293	423	366	+57	789	89	878	53	1.86
1820	43.298	505	509	—4	1014	89	1103	42	2.31
Mean.		415.6	397.6	+180	813.2	47.1	860.3	47	2.09
1821	46.295	678	643	+35	1321	99	1420	35	2.85
1822	49.291	570	518	+52	1088	115	1203	45	2.20
1823	52.288	531	514	+17	1045	109	1154	50	1.99
1824	55.284	623	585	+38	1208	89	1297	45	2.18
1825	58.281	692	670	+22	1362	88	1450	42	2.33
1826	58.903	623	544	+79	1167	87	1254	50	1.98
1827	59.525	495	444	+51	939	83	1022	63	1.57
1828	60.147	603	556	+47	1159	74	1233	51	1.92
1829	60.769	600	556	+44	1156	65	1221	52	1.90
1830	61.392	532	493	+39	1025	100	1125	59	1.66
Mean.		594.7	552.3	+424	1147.0	90.9	1237.9	49	2.05
1831	64.834	676	677	—1	1353	71	1424	47	2.08
1832	68.276	840	835	+5	1675	86	1761	40	2.45
1833	71.780	679	695	—16	1374	102	1476	52	1.91
1834	75.160	765	675	—10	1440	114	1554	52	1.91
1835	78.603	991	828	+163	1819	95	1914	43	2.31
1836	79.464	831	817	+14	1648	122	1770	48	2.07
1837	80.325	875	868	+7	1743	100	1843	46	2.16
1838	81.186	937	862	+75	1799	121	1920	45	2.21
1839	82.215	863	859	+4	1722	141	1863	44	2.23
Mean.		745.7	711.6	+241	1457.3	95.2	1552.5	45	2.14



“The preceding table, being the first compiled from the printed bills of mortality, presents a general view of the number of deaths each year, from 1811 to 1839, distinguishing the males from the females. The still-born, having never lived, are excluded from the number of deaths in all correct bills of mortality, and are here placed in a separate column. The population at the different enumerations, and the estimated population for the intervening years, and the ratio which the deaths bear to the population, are given. The least mortality in one year was in 1827, being 939, one in 63, or 1.57 per cent; and the greatest in 1821, being 1,321, one in 35, or 2.85 per cent. The average annual deaths were 813, from 1811 to 1830, one in 47, or 2.09 per cent; 1,147 from 1821 to 1830, one in 49, or 2.05 per cent; and 1,552 from 1831 to 1839, one in 46, or 2.14 per cent, showing a small increase in the force of mortality.”

Mr. SCHELL—Boston is now a great deal worse than it was fifteen years ago, because there is a greater number of inhabitants there.

Mr. MATHER—Can you compare New York with any other European cities.

Dr. GRISCOM—I have no returns except from Liverpool. There was there an extraordinary result from cleaning out the cellars, which reduced the mortality exceedingly.

“In Liverpool, where, prior to 1847, there was nearly 14,000 cellars occupied or ready for occupation as residences, the dwellers in them suffered from fever in a proportion of 35 per cent greater than the rest of the working population. An act of parliament prohibiting cellar residences in that city took effect January 1, 1847, at which time the cellar population formed twelve per cent of the population of a certain district. The cholera which raged previously to the clearance of the cellars carried off upwards of 500 of the inhabitants of the district. The enforcement of the act reduced the cellar population to two per cent, or one-sixth; the next epidemic of cholera caused only 94 deaths in the same district, though the whole number of victims throughout the borough, from each epidemic was nearly alike. The cellar population of New York is believed to be nearly 25,000.

Mr. MATHER—Have you got any returns from Paris?

A. I have not, but I can furnish you with the sanitary regulations of that city.

Mr. SCHELL—I would suggest that the sanitary regulations of Paris and Providence, R. I., be given to the committee.

Dr. GRISCOM—I have also the sanitary laws of London, with the qualifications of the officers, as defined by Statute.

Gentlemen—I do not think it is necessary for me to detain the committee with any further statements in answer to the first question.

Mr. SCHELL—Doctor, have you any means of arriving at the actual number of cases of sickness?

A. There is a rule by which it is ascertained. It was announced by Dr. Lyon Playfair that for every death, from whatever disease it might result, there were twenty-eight cases of sickness, so that for every 1,000 deaths there will have been 28,000 cases of sickness.

Q. But there is a much greater mortality in small-pox?

A. True; but you must understand that I speak of the aggregate number of deaths from all diseases.

Mr. MATHER—Including small-pox?

A. Including everything. I made an examination for the purpose of ascertaining how near an approximation to this conclusion of Dr. Playfair the city would present.

From an examination of the dispensary returns and deaths, I found it correct almost to a fraction. It is now accepted as an established rule.



The following table, though partial, is, I believe, a fair exhibit of the comparative mortality of New York :

TABLE 6.

	New York. One in	Baltimore. One in	Philadelphia. One in	Boston. One in
1835,.....	40.87	42.75	.....	43
1840,.....	39.74	50.12	.....	. . . .
1845,.....	37.55	41.81	.....	.....
1850,.....	33.52	36.19	46.10	37.84
1852,.....	.....	.....	40.45	.....
1853,.....	.....	.....	43.61	.....
1854,.....	22.5	.....	38.10	.....
1855,.....	27.33	.....	47.81	39.88
1856,.....	28.67	.....	44.5	.....
1857,.....	27.15	.....	.....	.....

I desire to put in a little additional matter in answer to the first question. It is with reference to a subject which does not perhaps prevail here in greater proportion than at other places ; but here it is so extraordinary that it cannot be overlooked. I allude to the premature and still births in the city of New York. Of course the increase of population of a city is derived in great measure from its births as well as from its emigration, and whenever we lose a life it is so much loss to the city ; and so if a life is prevented, it is also to be counted a loss ; and I wish to show the committee what an extraordinary loss we sustain by the *prevention* of life.

(See ratio of premature and still births in table 1.)

This great increase arises from two causes. The first is that the debilitated and vitiated state of health of mothers forbids them carrying their children to the full term ; and the second is immorality. It is impossible at present to tell what proportion of these cases is due to each of these causes, for we have no statistics ; but they could be obtained by an intelligent and active head of the Department.

We come now to the second question :

2d. Are you prepared to assign reasons and causes, and to give authorities for your opinions on this subject.

Well, as there are various ways of ascertaining the comparative mortality, so there are various ways of finding out the causes of it. But the most essential are with the eyes and nose ; and if the gentlemen of the committee will allow me to accompany them in a carriage to some of the localities in this city, they will see what the causes are. If you will go, for example, through the block bounded by First and Second Avenues and Thirty-third and Thirty-fourth streets, you will find that the centre of the block is higher than the edges, and the water that falls upon it runs right down into the houses.

Mr. MATHER—You mean that this is one of the main causes, but not the sole cause ?

A. Yes ! At every rain storm the water runs down into the cellar and basements of the houses. There is no other way for it to get out. The hydrants are placed in the area—one to every two houses,—and there is no manner of draining off the waste water, so that there is a continual slop in the yards and areas of these houses. To every two houses there is only one privy, which is contrary to law. These are almost universally overflowing the surfaces. They are in the most filthy condition ; the contents are often found in the yards, so that when walking through you would get your feet in it. The atmosphere is of the foulest kind, as the place cannot



be visited by winds unless they blow down from over the tops of the houses, and consequently there is a miasma continually filling up that great bowl. Nearly every room has a separate family in it, and all the children play in the yard, so that there are not, nor can there be, any healthy children in such a place.

Mr. MATHER—Is there any other such locality?

A. Yes; there are hundreds of them.

Mr. SCHELL—You can find similar places within half a mile from this City Hall.

Dr. GRISCOM—I have here a report of a committee of the Association for improving the condition of the poor, showing the sanitary condition of the laboring classes in the city of New York, in 1853, with remedial suggestions, to which I call the attention of this committee, and from which I will make a few extracts, as follows:

“In the lower wards, there are thousands of poor persons, but comparatively few buildings suitable for their accommodation. Most of the houses are those which were formerly occupied by the wealthy who have removed up town; and now in their dilapidated state, many of them are tenanted by miserably poor Irish and German emigrants. Large rooms have been divided by rough partitions, into dwellings for two or three families, each, perhaps, taking boarders, where they wash, cook, eat, sleep and die; many of them prematurely, for the circumstances in which they live make fearful havoc of health and life. And in addition, night lodgers, consisting of homeless men, women and children, are not unfrequent, who, for a trifling sum, are allowed temporary shelter. There, huddled together, like cattle in pens, the inmates are subjected to the most debasing influences. Many of the dwellings, moreover, are out of repair; and the yards, from neglect of the sinks, in so vile a condition they can scarcely be stepped into, without contracting filth of the most offensive kind. Yet, however pent up or dirty these places, other things being equal, the rents are from 25 to 30 per cent higher than up town. The usual charges for single rooms, in the second or third stories, are from eight to twelve dollars a month; and for basement or attic rooms, from four to six dollars a month. The premises are usually sub-let to tenants who pay in advance, by an Irish or German liquor seller, who manages to occupy the best apartments himself, at their expense, and to pocket a considerable surplus.

“The resident poor in the first ward have doubled since 1846; and, according to the estimate of the missionary, there are now within its limits, of that class needing relief, not less than *fifteen thousand persons*. Yet it has not been found that any special provision of tenements has been made for this mass of indigent population.”

The dwellings in many parts of the city are thus characterized:

“Crazy old buildings; crowded rear tenements in filthy yards; dark, damp basements, leaky garrets, shops, out-houses, and stables converted into dwellings, though scarcely fit to shelter brutes, are the habitations of thousands of our fellow-beings, in this wealthy christian city. But as facts will better exhibit their character than general descriptions, let them speak.

“In Oliver street, fourth ward, for example, is a miserable rear building, 16 feet by 30, two stories and garret, three rooms on each of the first and second floors, and four in the attic; in all, ten small apartments, which contain *fourteen families*. The entrance is through a narrow, dirty alley, and the yard and appendages of the filthiest kind; yet the rent of the rooms averages one dollar and a half per week each, or \$750 a year for the premises, which is at least 30 per cent on their value. In the same ward, there is a front and rear building, six stories above the basement, which contains 56 families, numbering 250 persons. In Cherry street, is a “tene-



ment house," on two lots, extending back from the street about 150 feet, five stories above the basement, so arranged as to contain 120 families, or more than 500 persons. A small room and bed-room are allowed each family in this building, which is of the better class; but the direful consequences of imperfect ventilation and over-crowding are severely felt. There are, probably, in this ward, from 40 to 50 tenant houses, averaging 24 families each."

"But the most objectionable habitations in this district are the cellars, in some instances six feet under ground, which have to be bailed out after every rain storm; and are so damp as to destroy health, so dark as to prevent industry, and so low that ventilation is impossible. Though utterly unavailable for any other use, they are rented at rates which ought to procure comfortable dwellings, to persons who have become as debased in character as the condition is degrading in which they live.

"Sub-letting is common in this ward, which increases rents about 25 per cent.

"In the fifth and most other wards, in order to improve every foot of ground, tenements are crowded together in pent up courts, which extend the whole length of the lots." \* \* \* \*

"One of these, for illustration, containing eight small apartments, with bed-rooms attached, each tenanted by a family at one dollar and a half per week, or \$624 a year, was computed to yield an interest of over 20 per cent on the investment, after paying for repairs, taxes and insurance. Another description of building, containing 25 families, on a lot 25 feet by 100, and assessed at \$6,500, yielded an annual income, exclusive of taxes, repairs, &c., of \$1,950, or 30 per cent on the assessed value. Yet these exorbitant rents command but few comforts. Most of the tenements are filthy and wretched in the extreme, the direct tendency of which is to induce disease, lower moral character, and take away all thrift and care for decency and cleanliness.

In the sixth ward, the manner in which many of the poor live, and the extent to which vice and degradation prevails, is too well known to require description. Many are in a condition incomparably worse than the hovel dwellers, where father, mother, children and swine, live and lodge together. These dens of squalid wretchedness, intemperance and filth, pay a rent which should afford the occupants comfortable homes. Four houses and lots, indiscriminately taken, valued at \$40,500, contain 87 families, and rent for \$6,000, or more than 17 per cent. Another lot, with a new five story building, contains 48 families, and rents for \$3,892, or more than 26 per cent. One block, by enumeration, was ascertained to contain 365 families, numbering 1,562 persons; average size of apartments 10 feet by 12, *the ceilings of some of which were too low to allow the inmates to stand erect*. Many rooms were without fire-places, and so constructed that there was no possibility for the entrance or escape of air except by the door or crevices of the windows. The tenements, yards and sinks, were in a most filthy and disgusting condition; in several places there were accumulations of stagnant fluid, full of all sorts of putrefying matter, the effluvia from which was intolerable; and in addition to all this, most of the roofs were leaky, and the basements, after every rain, were flooded with filthy water. Yet, even these wretched tenements rent at from 5 to 7 dollars per month."

In the eighth ward, "'rotten row,' as it is appropriately termed, in Laurens street, is one of these spots of poverty, filth and degradation, which are scarcely surpassed by any other. \* \* \* It consists of eight houses on either side of the street, fronting each other, with as many more



in the rear, containing in all about 250 families, and not less than 1,250 persons, in a space of about 180 feet, by perhaps a depth of 50 feet on each side. The pestiferous stench and filth of these pent up tenements exceed description. 'In one room,' says a visitor, 'six people are living, with hens scratching about on the bed. Every corner of these buildings is occupied, cellars and garrets. All the lower rooms and basements pay \$4.50 a month for rent. If the statements of the people are correct, the rent of each house is about \$480 per annum, which would give for this miserable block of buildings, front and rear, an annual return to the owner of \$7,680.'

MR. MATHER—Has there not been an improvement in this state of things since the date of that report?

A.—I will answer that question by another quotation from that report, which is as follows:

"A lot 60 by 100 feet, containing front and rear buildings, in which are fifty-eight rooms and bed-rooms; eighteen of them are 8 by 13, and the remainder 12 by 13 feet. The rents range from \$4.50 to \$6.50 each per month, always payable in advance, and yielding for the whole \$3,600 per annum, which sum is estimated to be *about fifty per cent on the investment*. Another lot, 50 by 60 feet, contained twenty stables, rented for dwellings, at \$15 a year each, the whole cost of which was only \$600. An experienced builder, long a resident in the ward, affirms that many of the worst class of houses pay an interest on their value of 100 per cent."

The committee need no argument to be convinced that when such profits as these can be obtained, no improvement will *voluntarily* be made in these dwellings.

The fourteenth annual report of the same association, made in 1857, and which is their latest report, gives the following comparative statement of the health in the London model houses, situated in different localities, with the health in other localities, and in the whole city:

TABLE 7.

"The average annual mortality among persons of all ages,		
at the potteries, Kensington, for five years, was .....	40	in 1,000.
Ditto, in the districts where the model houses are located, ..	27.5	in 1,000.
Ditto, in all the model houses of the city, .....	7.5	in 1,000.
Mortality of children under ten years of age at potteries,		
Kensington, .....	109	in 1,000.
Ditto, in whole of London, .....	46	in 1,000.
Ditto, in model houses, .....	10	in 1,000.

"Dr. Southwood Smith, who gives the above statistical information, remarks that if the whole of London had been as healthy as the model houses, there would have been an annual saving in the city of 23,000 lives. And Mr. Simon, the able medical officer of London, affirms that 'of the 52,000 deaths which annually occur in the metropolis, one-half might have been averted by available means, whilst the untold amount of acute suffering and lingering disease, caused by neglect, is beyond calculation.'"

This shows a saving of over 30 lives in the 1,000, by living in model houses.

MR. MATHER—Do you know the character of these model houses?

A.—I have seen them.

Q.—What is their character?

A.—They are very much like one in this city situated on the block between Canal and Hester, and Elizabeth and Mott streets. That one is a good sample of what a tenant house should be, except that the ventilation



is not quite as good as it ought to be. Have I said enough on the subject of causes? In fact it is so extensive a subject that it would require a long time to present it fully to view.

Mr. MATHER—There are some other causes of course, are there not?

A. Yes, but crowded houses with bad ventilation is one of the principal causes.

Q. Will you give us a list of them?

A. 1. Crowded tenants, without ventilation.

2. Cellar residences, where nuisances prevail.

3. The filth which collects, not only in the houses themselves, but also in the yards.

4. The defective internal domiciliary arrangements of the houses, especially as regards ventilation, warming, lighting and draining.

Dr. SMITH here said—I was compelled to leave a respectable looking house in West Broadway, in consequence of a running sewer. A most abominable stench pervaded the neighborhood for hours, and drove me from the place.

Dr. GRISCOM—There are thousands of such places in the city. There is one block up town where the owner is unknown, the property being in litigation, and where there are two or three different parties collecting rents; and so the poor tenants are imposed upon, for there is no responsible landlord, and they cannot get any repairing done to the property.

Mr. MATHER—That is an isolated case I suppose?

A. No, it is a very frequent occurrence. The sub-landlord shields himself in that way.]

5. The next most potential cause is darkness. There are hundreds of rooms that are never reached by the sunlight. A mouldy smell always prevails in them. Go there blind-folded, when your olfactories are so as to appreciate it, and you will say “this house is never dry.”

6. Then the filthy condition of the streets is a great cause of general sickness. The results produced by it in the human system, I regard as similar to those produced by the marshes in the western country.

7. In the next place I should regard as a general cause of the sickness of New York, the ignorance of the poor population in reference to the laws of health, and in this matter they must be aided by government. I did not come prepared with a table of this kind, but I may perhaps improve this arrangement of causes, by a little more reflection, and add it as a part of this communication.

Mr. MATHER—Are you through with the causes, doctor?

A. 8. There is one other cause which belongs to this branch of the subject, and that is the drinking of spirituous liquors. The drinking of bad rum is a potential cause. But allow me to say in partial extenuation of that habit, that there is a physiological reason for it in the poorer classes. I have said this publicly, and my views will be given in a more condensed form, by quoting what I said on that occasion, as follows:

“Atmospheric air is to the animal system, a powerful stimulant as well as nutrient substance. In sufficient purity and copiousness, it imparts a sustaining and vivifying power unequalled by any other substance. Its vitalizing operations present one instance of the wonderful adaptations of natural things to each other, but it is singularly striking, because of the immediate and incessant dependence of animals upon it, for life and strength. Air, when pure, gives a freshness and vigor, a tone to the nervous and muscular parts of the system, productive of the *highest degree* of mental and physical enjoyment. Without the tone thus imparted, the functions of the system become relaxed, and in addition, the animal spirits and feelings become depressed and uneasy. To relieve this condition, nature



instinctively seeks some stimulating means. Many feed on mental excitement—the stimulus of business with some, with others of society, with some of hope and expectation, keep alive the energies. But the farmer feeds his nervous and general strength on fresh air and wholesome labor. Artificial stimulus is not required by him, he does not feel its want, and has comparatively little relish for it. But the dwellers in the cellars, courts, and ill-ventilated garrets, depressed and prostrated by the want of the stimulus given by nature, unable to enjoy the feelings guaranteed by an unfailing abundance of oxygen, *instinctively* feel the want of a substitute; *they find it in alcohol*. The allurements held out by those dens of destruction, abounding on all sides, add temptation to instinct, and the child of ignorance and misfortune terminates his senses, and often his life, the victim of licentiousness and unnatural debauchery.”

Mr. ELY—What do you suggest as a remedy, in accordance with the third question as follows:

3. Are you prepared to suggest remedies for existing evils in connection with the public health?

A. Well, in one word I suggest as a remedy, “remove these causes.” If you ask how they are to be removed, I say by legislation in the proper direction; and that direction is indicated by science, by the example of other cities, and by common sense. Now, I have gone over a list of diseases which I have shown have been increasing in the city of New York, and adding very greatly to its mortality. These diseases, I have said, are preventable. There is no question about it at all. I can prevent them in my own house; I *do* prevent them there, and in the houses of my patients, where I have authority. They can just as easily be prevented in one house as another.

Mr. MATHER—Could you prevent them in the tenement houses you have described?

A. Certainly I could if I had the management and control of them, just as well as in any other house.

Mr. SCHELL—There is a statute law conferring authority upon the proper officers, to have these errors corrected; why is it not exercised sir? I would like to ask you that question.

Mr. ELY—(interposing)—Because I suppose, there is a limit to the power of the officials.

Dr. GRISCOM—No, that is not the reason. Rather, the reason is because the officers don't know how to carry out those laws in the proper manner.

Mr. SCHELL—That is the best reason in the world.

Dr. GRISCOM—*Incompetency* is the word. When an individual appointed to an office of this kind is called to see a case of small pox that is said will prove fatal if not immediately attended to, if the health warden is the grocer on the corner, or a carman, it frightens him and he runs away.

Mr. SCHELL—Doctor, we have a board of health here in which there are three physicians, and of which the city inspector is a member.

Dr. GRISCOM.—The commissioners of health have nothing to do with the general health of the city, except that when a case of malignant disease is reported it is their duty to visit and examine it. But for the ordinary sanitary regulation of New York there is no medical man in office, and there has not been one in office for fifteen years. Since 1844 there has not been a medical man in the city inspector's office. The board of health of the city of London is composed of practical men, and their chief medical officer is Dr. John Simon, one of the most distinguished physiologists of the day, recognized as such from his erudite papers on physiology and hygiene. It is rather remarkable that he holds the office, so arduous are his other duties;



but he has taken hold of it vigorously. The city of London is divided into thirty-two districts, and over each of these districts there is a medical man. I have one of the reports emanating from these gentlemen.

Dr. Letheby, the officer of health of the city of London, states in his "*Report on the sanitary condition of the city of London*," for the quarter ending March 28, 1857, says that in some of the rooms of the haunts of filth and misery which it was his duty to visit, he found "the atmosphere so close and unwholesome, infested with that peculiar fusty and sickening smell so characteristic of the filthy haunts of poverty," that he "endeavored to ascertain by chemical means whether it did not contain some peculiar product of decomposition to which might be attributed its foul odor and its rare power of engendering disease." He "found that it was not only deficient in the due proportion of oxygen, but that it contained *three times the usual amount of carbonic acid, besides a quantity of aqueous vapor* charged with alkaline matter that stunk abominably, doubtless the product of putrefaction and of the various fœtid and stagnant exhalations that are given off from the unclean human body, and a pestilential scourge of disease, the consequence of heaping human beings into such contracted localities."

Dr. R. Angus Smith, of Manchester, in his experiments on the *air and water of towns*, has demonstrated "that the condensed air of a crowded room yields a deposit of a thick glutinous mass, having a strong animal odor. This deposit becomes in a few days converted into a *vegetable growth*, which is followed by the production of *multitudes of animalcules*."

I have recently had communications from Dr. R. H. Whiteman, one of these officers, which show the depth of vigor and intelligence with which they go into the subject of sanitary reform, and the results of their labors I have already given you. How they arrived at these results is clearly indicated by the efficient manner in which they discharge their duties. What the character of those medical officers shall be is provided by law. Now gentlemen allow me to read you the law which designates the duties and qualifications of those officers.

Mr. ELY—Do those officers correspond to our health wardens?

A. They do. They are appointed by the local authorities of the districts, however, but are all under the supervision of a head officer. In the "Act for the Better Local Management of the Metropolis" of London, it is provided on page 85 that

"Every vestry and district board shall from time to time appoint one or more legally qualified *medical practitioner or practitioners of skill and experience*, to inspect and report periodically upon the sanitary condition of their parish or district, to ascertain the existence of diseases, more especially epidemics increasing the rate of mortality, and to point out the existence of any nuisance or other local causes which are likely to originate and maintain such diseases, and injuriously affect the health of the inhabitants, and to take cognizance of the fact of the existence of any contagious or epidemic diseases, and to point out the most efficacious mode of checking or preventing the spread of such diseases, and also to point out the most efficient modes for the ventilation of churches, chapels, schools, lodging houses, and other public edifices within the parish or district, and to perform any other duties of a like nature which may be required of him or them."

As a specimen of their duties as regards inspecting houses let me read section VI, of "An act to make further provisions with respect to common lodging-houses," which is as follows:

"Where it appears to the local authority that a common lodging house is without a proper supply of water for the use of the lodgers, and that such a supply can be furnished thereto at a reasonable rate, the local



authority may, by notice in writing, require the owner or keeper of the common lodging house, within a time specified therein, to obtain such supply, and to do all works necessary for that purpose; and if the notice be not complied with accordingly, the local authority may remove the common lodging house from the register until it be complied with."

I have the names and residences of all the medical officers of the city of London. They are the best men in the profession. It is nonsense to say, as some have said, that medical men will not go into these matters. Our dispensary officers live among such diseases, for they go to treat them, and why should they not be empowered to remove the causes of those diseases?

Paris is divided into fifteen *arrondissements*, which correspond to our wards, and to the vestry's of London. There are nine persons in each *arrondissement* who have charge of its sanitary regulations. By turning to a list I find that in the first *arrondissement* the officers are first a proprietor, the second a refiner, the third a former mayor, next two doctors of medicine, the next a pharmacist, the next a veterinary surgeon, the next an architect, and the last a civil engineer; and the officers of the other *arrondissements* are appointed from the same classes of persons. The law provides that there must be two medical men in each. That local boards have no direct authority. It is their business to examine, report and recommend to another body composed of twenty-nine individuals, every one of whom is a medical man, which is an executive body, and constitutes the board of health of Paris. I have some returns defining the duties of this commission. They refer to the external causes of sickness, even to the condition of walls, and the painting and papering of them, to the basements and many other matters. There is one section of law which allows them to inspect every building, and prevent the habitation of every new one until it is perfectly dry. They will not let you occupy your own house until it is dry. As causes of disease there are spoken of, insufficiency of light in houses, the crowded condition of those houses, the dampness of them, encumbrances of various kinds, the subject of school houses, the warming of buildings, the adulteration of food, and the proper manner of constructing stairs to prevent danger from their insecurity in case of fire. (I have been in tenement houses very frequently here, and in some places where I had patients I had to grope my way by the railing, for I could not see a step, so perfectly dark are the entrances. Of course everything is closed and there is no air passing through the house). Then they speak of the manner in which the dish-water is to be discharged from the houses, and of the drainage of the streets. This French book which I hold in my hand is of a character that I recommended, some years ago, to the authorities of New York. It is a little pamphlet or tract, giving instructions on sanitary affairs, to be gratuitously distributed among the people in order that their ignorance on these subjects may, in a measure, be removed. When I recommended it to be done here I did not know that those suggestions were adopted in Paris till I got hold of this pamphlet.

My idea is that the whole sanitary body should be composed of thoroughly qualified medical men—the recommendatory as well as the executive body; and that they should be composed of that class of medical men, if possible, whose private and public duties are coincident with each other; so that when an officer is visiting a patient and discovers any tangible causes of disease, he can require them to be removed. Now, we find a body of men in New York (dispensary physicians) who are engaged in curing the diseases which are induced by those causes to which I have referred. They visit about 24,000 cases a year. There are fifteen or eighteen of them



appointed to visit patients in these localities, and they have sometimes as many as twenty-five patients a day each to visit. They know all the unhealthy localities, and it would require of them scarcely a minute's thought to tell what should be done, so that all that is required is the *power* to perform what is necessary to remove the causes of the disease.

As to the general question, whether a person other than a medical man can perform these duties? I would say that it does not require argument to those who understand its neglect to convince them that he cannot. In this matter, diseases are to be both treated and prevented, and who else but men who understand the nature of disease can possibly tell what are the causes of the disease, and how they are to be removed. I do not think it requires argument before this committee, and therefore I will not present any. You would not call in a lawyer to cure you of inflammation of the lungs, but to conduct a law case; nor a shoemaker to draw a plan for a house, but an architect. *Ne suter ultra crepidam*, "let not the cobbler go beyond his last." I have no doubt at all that in regard to the sanitary affairs of New York, if none but medical men were appointed to office, but little alteration of the health laws would be required.

Mr. MATHER—That is, that the city inspector should be a medical man?

A. Certainly; no other but a medical man can be fit for the office.

Mr. ELY—Are not the dispensary physicians entirely independent of the health department of this city?

A. They are.

Q. Is the dispensary a voluntary institution?

A. Yes, it is sustained by private subscription, and by the Legislature of the State, and city, which give them a small amount per annum; this, I believe, does not exceed ten cents for each patient.

Q. Should not they be connected with the health department of the city?

A. That is what I suggest. Here is something that I overlooked. The Report of the General Assembly of Rhode Island, relative to the registry of births, marriages and deaths in that state, for the year ending May 31, 1853, says:

"A curious investigation has been made in London to ascertain the effect of density of population upon health. In a large district where the population is so dense that there is only 35 square yards for each person, the annual mortality is 3,428; in another district of the same population, where each individual has an allowance of 119 square yards, the mortality sinks to 2,786; in a third where there are 180 square yards to each person, the mortality is only 2,289, or under two-thirds of what it is in the closest of three districts. It was also found that in the three districts the mortality from typhus fever was, respectively, as we go from the roomiest to the closest, 131, 181, and 349. Precisely similar results have been discovered in Paris. M. Villermé has there ascertained that the poor in some *arrondissements* are just double what they are in the rich. Taking the whole of the above facts into account, we must see that not only do health and longevity depend expressly on laws, the operation of which we can understand, but man has it in his power to modify to a great extent the circumstances in which he lives, with a view to the promotion of his organic well-being and preservation."

It is also stated in the same report:

"Between the years 1730 and 1750, 74 of every 100 children born in London, died before they were six years of age; but in more recent times only 31 and a fraction out of every 100 die under the same age; that is to say, the deaths of children in London were then more than twice as numerous as they are now. About a century ago the mortality of the children received into the London hospitals was of astonishing amount. Though



the fact seems scarcely credible, we believe there is no good reason to doubt, that of the 2,800 annually received, 2,690, or *twenty-three in every twenty-four* died before they were a year old. It was at length seen that this mortality was the effect of over-crowding, impure air, and imperfect aliment; and, after an act of parliament had been procured to compel the officers to send the infants to nurse in the country, only 450 out of 2,800 died in the first year. It has been ascertained that during the last century about a third has been added to the average expectation of life; that is to say, an individual now has as good a chance to live forty years, as he had a hundred years ago of living thirty. To what can such a fact be owing but to the diminution of the causes of disease in the improved condition of the people."

A unanimous report of a committee of the board of supervisors to whom was referred preambles and resolutions on the subject of the public health and the city inspector's department, after speaking of London, says:

"The second instance relates to the city of Providence, R. I. At the first threatened visitation of cholera in 1832, the inhabitants and authorities took every possible precaution against it by setting every part of the city in thorough order. Purification and cleanliness of houses, streets, yards, courts and canals were rigidly enforced; a general examination for and removal of nuisances within, and a careful quarantine of everybody and thing from other places maintained. In spite of the quarantine, however, it made its appearance in the city, attacking persons who had not been outside; but it was so far kept in check by the excellent sanitary precautions, under the recommendations and supervision of a medical board, that there occurred only thirty-six cases and twenty-five deaths from that disease. In 1849 its appearance was again threatened, and, mark the difference of conduct and result, speculation now took the place of action. The excitement of 1832, under which the city had been *prepared* against its approach, was now drowned in discussions respecting its nature and treatment, and no efforts were made to purify and cleanse the city, until after its appearance, and the consequence was one hundred and fifty deaths against twenty-five of the former attack. Again, in 1854, it reappeared, when the same apathy and indifference prevailed, and there occurred one hundred and fifty-nine deaths. Since the latter period, Providence has been put under the care of well qualified sanitary officers—medical men—by whose supervision its general mortality has been reduced below that of any known city, one in fifty-five of the population."

In reference to the services of the board of health, and the appointment of proper health authorities, the same report says:

"The board of health is the local *legislative* authority on the subject of the public health, while the city inspector's is the *executive* department. They stand in a similar relation to each other, as do congress and the army and navy of the United States. The one makes laws and the other executes them; and it would be as much a mark of wisdom in the general government to put the conduct of a war into the hands of officers who never smelt powder, nor studied tactics, as for the people or the authorities of this, or any other city, to commit the battle with disease, into the hands of those who know nothing of the enemy to be contended with, nor of the means by which it is to be overcome, or held in check."

And in conclusion, the report says:

"Your committee, therefore, cordially recommend the adoption of the following resolution, and the transmission of the same to the Legislature of the State:

"*Resolved*, That in the opinion of this board, an imperative necessity exists for such improvements in the details of the city inspector's department, and in the qualifications of its executive sanitary officers, as are dic-



tated by the modern progress of science ; and that a legislative enactment to this effect would add greatly to its usefulness and efficiency, and meet with the approval of the great body of our fellow-citizens.

JOAN R. BRIGGS,

T. B. STILLMAN,

P. P. VOORHIS,

WALTER ROCHE,

*Committee on County Officers.*

Dr. Edwin M. Snow in his report of the sanitary condition of Providence, R. I., in August last, gives a very much improved state of the public health as indicated by the figures, and appends this remark :

“ Though we have reason to rejoice at the small number of deaths in the city of Providence, it should not be forgotten that *this number was very much larger than it should have been*. Of the 64 children under 5 years which died, three-fourths at least, were destroyed by improper food and clothing, and by the impure air they were compelled to breathe.”

I wish to present also, the following quotation from Noah Webster’s work on Epidemics ;

“ An ignorance of the nature of a disease, and its degree of danger, may be pardonable in a prince, or the legislators of a free State. But there is a point beyond which ignorance in medical professors becomes a *crime*. No science is necessary, however, to convince any man, that most pestilences proceed only from the deranged state of the elements, aided by the morbid exhalations of cities. This is a fact which may be known to a certainty, by very little reading and observation. It was well known in past ages, when men were more governed by observation, than by theories and erroneous reasoning. \* \* \* \* \*

For it will be observed that pestilence has always been the *peculiar curse of populous cities*. Of about two hundred general plagues recorded in history, a few only have been so violent as to spread over countries, into villages and farm houses. Almost all have been limited to large towns, evidently demonstrating that they would never have effected mankind without the impure air generated in those places. This is a truth as unquestionable as it is important ; and on a conviction of this hangs the safety of men from these dreadful calamities.”—*Webster on Epidemics, vol. 2. p. 209.*

Now, Mr. Chairman, I will ask your attention for a few moments to a little further reply to the third question. I have already expressed the opinion that the head of the health department should be, in the language of the English law, “ a medical practitioner of skill and experience ;” and I should be very glad, indeed, to see that same phraseology introduced into the law here. I have already said that the title of our health department is a misnomer. The sanitary regulations are under the supervision of the city inspector, but he is inspector of nothing in particular. Other cities have taken the initiative in this matter, and called theirs “ The Department of Public Health.” I think we should have such a department in the city of New York ; people would then know exactly what it was meant for, and know where to seek remedies for the sicknesses which prevail. Then there should be a very definite and particular definition of the duties of those officers. This I have laid down in a plan of a law formerly presented to the Legislature.

There are two suggestions in that law which I wish to repeat, as they are new entirely, and I believe are unknown in any other part of the world, and as they are in themselves manifestly so valuable, except the imposition of a little extra duty on certain persons, without any additional expense, that they cannot be overlooked, viz :

“ § 5. The public dispensaries, hospitals, asylums, infirmaries, and pris-



ons now existing, and hereafter established in the city of New York, shall make such returns and statements through their medical or other officers, to the superintendent of public health, at such periods, and in such manner, as the said superintendent may deem necessary to ascertain the sanitary condition of the city."

It will be observed at once that the only means we have now to judge of the sanitary condition of the city, is through the monthly returns. My proposition is that the number of persons sick, and their diseases, should be made known to us, so that if typhus fever or small pox, or any other disease is prevailing, we shall know it, and can have it attended to immediately by proper sanitary regulations.

Then I propose that,

" § 6. The superintendent of public health and the health wardens, shall conjointly constitute a medical council, whose duty it shall be to advise the board of health and the common council, in all sanitary matters which may be referred to them by said board of health or common council, and in whatever the said medical council may deem necessary for the benefit of the public health. Said medical council shall meet as often as may be required by the superintendent of public health, who shall preside over its deliberations, and certify to such of its proceedings as are of official character, and shall cause minutes of its proceedings and discussions to be regularly kept and preserved."

There is another thing, gentlemen, which must be adopted in the city of New York, if you want to do anything towards rectifying the miserable condition of the domicils, and that is to *make the landlord responsible for their condition*. There is a great deal of property in the city of New York that apparently has no owner. Hence one provision of law should be that,

" If, in the opinion of any health warden, any place occupied as a dwelling shall be unfit for the purposes of a residence, by reason of dampness, darkness, dirt, filthiness, too low ceiling, ill-ventilation, being under ground, or any other cause, he shall immediately report the same to the superintendent of public health, who shall, upon being satisfied that such report is true, serve a notice upon the owner, agent or lessee, directing the same to be put in proper order and condition, and said room, house, or premises shall not be occupied as a dwelling, under a penalty of ten dollars for every day it may be so occupied, until said order is complied with to the satisfaction of said superintendent, except upon permission of said superintendent."

I wish to present the following statement relative to the comparative mortality and population of New York and London, and the mortality of this city, which I have just prepared.

TABLE 8.

The population of New York by last census (1855), was,.....	629,810
“                    London                    “                    “                    .....	2,362,236
nearly four times as great.	
The mortality of New York in 1857 was,.....	23,196
If the mortality of London bore the same ratio to that of	
New York, as does its population, it would have been (in 1857),	92,784
But it was only,.....	56,786
A saving of lives over the New York rate of.....	45,998

To this calculation showing the number of lives saved in London, nearly 46,000 over the ratio in New York, in consequence of its better sanitary regulation, I ask permission to give some additional testimony to the same effect, from a source nearer home. It is contained in a letter



to me from Dr. E. M. Snow, superintendent of public health, in Providence, R. I. which I have just received, and this will conclude what I have to say at present on the subject. The letter was as follows:

PROVIDENCE, R. I., *Oct.*, 28, 1858.

“Dr. Griscom :

Dear Sir—Yours of the 26th is received, and I hasten to reply. I should be extremely happy to do anything possible to assist in the great work in which you are engaged; but it will not be convenient for me to go to New York this week. Besides, I rather suspect you trace a more direct connection between the greatly improved health of this city during the last three years, and the efforts which have been made in sanitary measures, than I should dare to claim. Something has been done, and I have no doubt some effect has been produced; but I think more has been effected by the favorable weather than by anything man has done, or can do. One very important thing I have done, and this I think will have a very important influence upon the health of the city. I procured the passage of a law by which the board of health are authorized to remove the occupants and close any tenement which they consider unfit for occupation as a dwelling. With this law I have been able to shut up nearly all the cellar tenements in the city. I do not think there are five complete cellars occupied in the city, and not fifty half basement tenements. The abolition of underground habitations in New York would alone save hundreds if not thousands of lives annually. The most that has been done here, except in relation to cellar population, has been done by notification and appeals to the people. Very little has been done by force of law. Indeed we have very little law that is of any value on the subject, and our people are so jealous of personal rights that I have been unable to obtain all the laws I think we need. I am happy to say, however, that the people respond very generally to appeals to their common sense, and that we are thus able to remove nuisances very effectually without a resort to legal process.

“The practice here is to organize, in May of each year, a house-to-house visitation, by special police, in all parts of the city where it is needed. These reports are made to me, and recorded. I thus learn the condition of streets and houses, and know precisely the location and houses where nuisances must abound. The owners of premises where nuisances are found are then served with a notice, through the post-office or otherwise, from me, and in some cases with a legal notice from the city marshal or from the board of health. This is sufficient in nearly all cases to procure the removal of nuisances, and the resort to legal measures is very rare. Our city is very favorably located to keep clean, and I have no hesitation in saying that, not only in its public streets, but also in private lanes and yards, this city is cleaner than any other of its size in the country.

A heavy shower is sufficient here to thoroughly clean the streets and yards in nearly all parts of the city; and mostly, I think, on this account the past season has been astonishingly healthy.

\* \* \* \* \*

I take the most pride in the registration of births, marriages and deaths in this city, which I consider nearly perfect. I can confidently say that every death is reported, including still-born, and most of the premature births. Besides this, we obtain the best evidence of the cause of death, viz: the physician's certificate, in every case where a physician is employed. I consider a complete registration of deaths and causes of death as the first step and foundation of correct sanitary measures in a city.

But I cannot say more at present.



There were only seven deaths in this city last week, with 50,000 population. If New York has 800,000 population, the same proportion there would have given 112 deaths for the week instead of 350.

Truly yours,  
EDWIN M. SNOW.

TESTIMONY OF DR. JOHN McNULTY.

Saturday, Oct. 23, 1858.

Dr. JOHN McNULTY said—Of course, Mr. chairman, I will not be able to give you as full and lucid a statement as Dr. Griscom has given, because, in the first place, I do not feel that I am competent, for he has made the subject a matter of study for several years, while I have studied it but few. And much that he has stated, that I might have alluded to, it is unnecessary for me to repeat. I fully endorse the statements which he has made, and I propose merely to give some additional facts.

In the first place, the question was asked as to the mortality of Paris. In conversation with you, I stated that the returns could be obtained. I have glanced at the book which contains it; it is printed in French, and from the casual glance I made at it I am unable to speak positively of them, except in one case, namely, that the deaths were one in 44 and a fraction of the population. I have visited the life insurance offices, and I find that the percentage of premium in insurance is rather more favorable in Paris than in London, showing that the mortality is better in Paris.

Now, sir, I wish to call attention to one or two points which the doctor omitted. One is, that since 1844, since which time there has not been a medical man in the city inspector's office, there has been a steady and uniform increase in the mortality of the city, as will be observed by the following statement from the city inspector's report for 1856:

TABLE 9.

In 1805, a census period, the ratio of deaths to the population was 1 to 32.98					
1810,	"	"	"	"	46.49
1815,	"	"	"	"	41.83
1820,	"	"	"	"	37.19
1825,	"	"	"	"	34.78
1830,	"	"	"	"	38.97
1935,	"	"	"	"	40.87
1840,	"	"	"	"	39.74
1845,	"	"	"	"	37.75
1850,	"	"	"	"	33.52
1853, as computed,	"	"	"	"	33.85
1854,*	"	"	"	"	22.05
1855, a census period,	"	"	"	"	27.33
1856, as computed,	"	"	"	"	28.67
1857,	"	"	"	"	27.15

I wish it borne in mind that since the office has been held by other than medical men, there has been a steady and positive increase in the mortality ratio, until it has culminated for three years in succession to one death to 27 of the inhabitants.

\* This number includes 2,509 deaths by cholera; the ratio is based on the succeeding census. The ratio from other causes than cholera in 1854 was one in 24.21, but would be much greater if the actual population were known, many thousands doubtless having fled the city on account of the pestilence.



I also wish to call your attention to the fact that statisticians estimate one death to 50 of the population, as the point of health. In 1844, in the city of London it *exceeded that*, for there was but one death, to 52.24 of the population. Look at the following statement :

TABLE 10.

From the Register General's report. Population and deaths in the metropolitan district of England :

Population, (census 1851), 2,363,236.

Year.	Ratio of Deaths to Population.
1844 .....	1 in 52.24
1845 .....	1 in 49.34
1846 .....	1 in 47.39
1847 .....	1 in 48.24
1848* .....	1 in 40.52
1849* .....	1 in 34.25
1850 .....	1 in 48.13
1851 .....	1 in 42.38
1852 .....	1 in 43.32
1853 .....	1 in 38.37
1854* † .....	1 in 31.46

Now, it is my opinion that the city of New York should be as healthy a city as any in the world, in the very nature of its location, its climate, its soil, its sewerage, its water—for not only have we the Croton water in the city, which is superior to the water in most other cities of the world, but we have on either side of us, two broad, deep, and rapid rivers, (which London has not), washing away the accumulation of filth. We have every advantage of position, and should be a healthier city than London, but the mathematical demonstration shows that we are not as healthy. No known *natural causes* exist, to which this great mortality in New York can be justly attributed. It is said that emigration is the cause of it. In the report of the city inspector it is stated that there were 587 deaths in the Emigrant hospital at Ward's island, and a large number were sent to the Marine hospital at Staten island, and all that die in that hospital are added to the mortality of Richmond county; they are not added to the mortality of the city of New York.

The returns of mortality and certificates of death show the place of birth, the age, and the length of time foreigners who die, have been in the country, and it appears from this source that over two-thirds of those who die here are natives. I admit that the emigration has an influence on the mortality of the city of New York, but I believe it is more than counterbalanced by the extreme, absolute, indigent poverty of London which I may say, indeed, we know nothing of in this city. I think that the most extreme poverty that can be shown among us, is not to be compared with the poverty to be found in London. The ratio of mortality is presumed to be according to the ratio of population. That is to say, that in a rural city, such as Providence, R. I., for instance, we should expect a more healthy condition than in the city of New York. By the same rule—which is certainly a good one—we should expect to find the mortality of the city of London a great deal worse than that of the city of New York, and other cities of less inhabitants than the metropolitan district of England. But such is not the case. In this city with 629,000 inhabitants, we lose by death 23,000 and a fraction a year, while London, with a population of nearly four times greater, loses only from 44,000 to 60,000—in the cholera season it run up

\*Cholera.

†In N. B. in 1854, the deaths were 1 in 22.05, both estimates including cholera.



to 81,000—showing that the percentage is not maintained—that they are there absolutely more healthy in London than in the city of New York. That I conceive to be as clear as any mathematical proposition can be, and therefore I will not speak any further in relation to this matter. But I wish to express distinctly the opinion that the vast numbers of poor people, and the extreme poverty found in London, is sufficient to counterbalance the flow of emigration into New York, speaking in a sanitary point of view. We know there are but a few poor persons among us who do not eat meat, while there are thousands in the city of London who do not eat meat once a week, if they do once a month.

Now I wish to speak of small pox. There has been a great deal spoken and considerable written on this subject ; but still it seems to be impossible to impress upon the minds of the people the fact that it is no more necessary for a man to have small pox in his house than it is to have a boa constrictor there. Ofcourse, if he will let somebody bring either there, he will have them. In the first six months of the present year (1858), there were 425 deaths by small pox in this city, as will be observed by this detailed statement :

TABLE 2.  
*Deaths by Small Pox, 1858.*

			Probable, 1 in 10.	No. of cases. 1 in 15.
January	.....	21		
	.....	15		
	.....	23		
	.....	17		
	—	76	760	to 1,140
February	.....	9		
	.....	14		
	.....	21		
	.....	24		
	—	68	680	to 1,020
March	.....	20		
	.....	12		
	.....	21		
	.....	18		
	.....	13		
April	.....	—	84	840 to 1,260
	.....	21		
	.....	17		
	.....	15		
	.....	10		
May	.....	—	63	630 to 945
	.....	10		
	.....	19		
	.....	15		
	.....	17		
June	.....	15		
	.....	—	76	760 to 1,140
	.....	17		
	.....	19		
	.....	14		
Total,	.....	8		
	.....	—	58	580 to 870
	.....	425	4,250	to 6,375
	.....			
	.....			



And the percentage of deaths that Dr. Griscom gave, I think fair and just. Now I think in all this there is enough to show that there are no sanitary regulations in this city that amount to anything.

Mr. ELY—Have you any statistics of small pox in the cities of Providence and London?

Dr. GRISCOM (interposing)—There has not been a single case in Providence for seven years.

Dr. McNULTY—In 1857 there was but one single death by this disease in Boston, whereas in the first six months of this year (1858, we have had 425 cases in the city of New York. I cannot speak positively of London, but I know it is very favorable there. I have seen a pamphlet giving much information on this subject, and which also shows the beneficial influence of compulsory vaccination. I recollect that in some of the continental states, where proper vaccination is enforced, the percentage of deaths from small pox to the 1000 deaths from all causes, is about  $2\frac{1}{2}$ . I think it runs from two up to seven deaths from small pox to the 1000 deaths from all causes. England itself is behind in this matter. I think the percentage of mortality in small pox in all England is 15 deaths to the 1000 deaths from all causes, whereas the mortality from the same disease in the United States is about 35 or 37 deaths in the 1000 deaths from all causes. Now of course vaccination can only be performed by a man who understands what vaccination really is. It is a common practice for persons to have their children's arm cut and something stuck in that looks like matter; and if a pimple rises they suppose that is vaccination, whereas it may be no vaccination at all. I would compel the health wardens of the city to vaccinate the people of their respective wards, gratis, and to keep themselves always supplied with *pure vaccine matter* to do it with. That should be an imperative duty; and it should also be imperative in the inhabitants to be vaccinated either by their own physician or the health warden. They should have power to quarantine a house in which small pox exists, in order to prevent communication with persons having small pox, except nurses and the proper amount of medical attendance.

Dr. Griscom entered so fully into the causes of disease that I hardly think it is necessary for me to speak much of them. I will merely state that I think he might have dwelt a little more on the subject of cholera. By the last European information I see that in the city of Mecca there have been 30,000 carried off by cholera, and the probability is that in a year or two we will have another visitation of it in our city—probably within a year, because the disease travels with much rapidity. From a report on the sanitary police of cities, by James M. Newman, M. D., of Buffalo, N. Y., I will quote some extracts, because they embody my views in a more condensed form than I could otherwise give them. On this subject he remarks:

“Its proclivity for an unclean population, and its exemption of the dwellers in the country, so constant as to scarce make an exception, points very strongly and forcibly to the hypothesis that with the former are found elements of some character necessary to a full development of the seeds of the disease, be they produced, or borne from what source they may. The pestilence has, too, its favorite haunts even within the town. In the crowded lane, and the filthy, over-populated street, reeking with foul emanations from the soil or neglected pavements, mingled with emanations as foul from the persons of the careless, negligent crowds, the disease reigns in savage triumph, and sways the sceptre of death over the devoted indwellers.”

And again,

“It is true that the outburst of the epidemic, or anticipation of it, will lead to a spasmodic effort at cleanliness, but the spirit of vigilance thus



engendered dies too often with the causes which call it forth. There is an absence of a continuous, systematic course of remedial measures calculated to remove at all times the fruitful soil in which the pestilence finds root, and develops itself into a full harvest."

There is one point which Dr. Griscom omitted in speaking of typhus and other forms of fever. Although we lost by cholera and its kindred diseases 31,000 in the United States, there were 32,000 died from fevers. All these deaths from fevers, because they create no excitement and panic; and such is also true of other diseases; people do not realize how rapidly the inhabitants are falling victims to them. It is a common impression that New York is one of the healthiest cities in the world; whereas, the fact is, that except New Orleans, and perhaps some years in Chicago, New York is most unhealthy city north of the tropical cities. It is the constant dropping off of the people by all diseases combined that goes to make up its great mortality.

Among the various means and regulations proposed for preventing disease in cities, Dr. Newman says:

"We now approach the consideration of those municipal regulations which have for their object the correction of the evils which originate and propagate disease, or are in any ways inimical to the public health. With the masses in our cities, dependence upon the influence of personal appeals, or a reliance upon simple individual labor, will be ineffectual for the eradication of these evils. Enlightened individual labor, it is true, can accomplish much, but, not to take into consideration the fact that very many are so indifferent to the interests of their neighbors, that provided their own ends are attained, they are heedless of the jeopardy in which the health and lives of others may be placed, the larger part of the work to be performed is too great for personal effort. Concentrated action, backed by law and the public purse, can alone accomplish the greater part of the labor to be performed.

"The regulations of a city which look to the preservation of the health of the citizens are among the most important of all its municipal laws. The defect has always been in the poverty of such existing laws, and the laxity and indifference with which these, feeble as they have been, have been executed. Our health laws would seem, too often, to have had a place upon the statute books simply as a species of solace to the public, and as if in obedience to a sort of half formed conception that something of the kind was necessary. But they have too generally been permitted to lie hidden from sight, and only been brought to light when some fearful calamity has fallen upon the community, and they have been aroused from their indifference, to make an exertion to correct the evils by which they are surrounded.

"Many of the evils from which our communities suffer, have their origin deeper than can be reached simply by the broom and shovel, and corrected by the removal of a little filth from the surface of the street, or from the corner of some yard or vacant lot. Many of the evils have their roots in the social and moral position and condition of the citizens. To them they are chained by the force of circumstances, which they cannot control; poverty often binds and confines them within the poisoned circle, and unless relieved by the charities of the public exerted in their behalf, must forever so remain."

In some of the upper districts, above 54th street, we have no Croton water, and the people in the Central park have to drink the water that is in those pools which are there, and wherein the ducks are in the habit of swimming, producing of course deleterious effects.

Pure air has been spoken of by Dr. Griscom, and that is a subject with



which he is perfectly familiar. Dr. Newman says "that the evils are to be corrected, and to be corrected alone by the strong arm of the law."

This report of Dr. Newman says:

"We want a strong municipal law, which shall plainly and distinctly say in what manner our edifices shall be built, especially those which are to be situated under circumstances likely to develop disease, and to be inhabited by those whose pecuniary circumstances and personal habits are liable to induce conditions from which may arise sources of contamination; a law which will prescribe the number of inmates to a building and to a room; a law which will define and give to each man, woman and child, a sufficiency of air and breathing space.

"To the objection that may be made, that this would be an encroachment upon individual rights, and would interfere with the interests of property holders, and subject them to expense and untoward hardships, I would reply, that society has assumed to itself this right in other matters; that it has assumed to itself the right of protecting itself against the dangers of conflagrations; that it defines the mode in which our buildings shall be built so as not to hazard the property of others; that it does this at the risk of an increased expenditure to the builder, and a diminution of his profits, nor pays heed to any cry of hardship which may be raised, as it legislates for the safety of the public at large; so, we contend that the power which defines that our edifices shall be built fire-proof, is equally potential to declare and insist that they shall be built disease proof. Law now defines the number of passengers a vessel may carry upon the seas, and sacrifices the profits of the merchant to the safety and welfare of the passenger."

Of sewerage, I would simply say that there is a very great evil consisting in the fact that our sewers are improperly trapped. In relation to the subject of sewerage, Dr. Newman remarks:

"A great error is generally committed in not constructing the sewers of sufficient capacity for accomplishing the work they have to perform, and, moreover, they frequently have not sufficient depth beneath the surface of the soil to fulfil the objects for which they were designed. They should, in every instance, be of sufficient depth to insure perfect drainage of the cellars of the buildings upon the street, and remove every opportunity for the accumulation of moisture beneath the floors. Side sewers should emerge in all directions, and furnish the most ample facilities for the inhabitants to employ them for all the purposes for which they are designed. Every inlet should be guarded by stench traps, and the greatest care taken for the prevention of the escape of any odors or gases from them, back into the streets or houses. The fact should not be lost sight of, that by sewerage you have only removed your filth from the surface to beneath the soil, and that, if improperly constructed, the deleterious influences of the mass of filth accumulated therein may ascend to the surface, and exert still its deleterious influences. Provision should consequently be made for the frequent cleansing of the same, by turning into them from time to time a supply of water sufficient to effectually wash them out and remove all impurities. This is especially essential during the droughts and heats of summer. It is seldom during this hot season that there is sufficient rain to keep them clean, and the foul smells which emanate from them can scarcely escape the notice of any who may be so unfortunate as to come within their vicinity. It is perhaps unnecessary to remark that the discharge of these underground channels should always be into some water course of sufficient capacity and current to remove all the contents far beyond the precincts of the town."

Now I have some documents which I wish to read to you, to show what intelligent and scientific sanitary knowledge and practice may accomplish.

have here some communications from surgeons of the United States Navy,



addressed to Commodore Paulding, which show the effect of sanitary regulations on board of some of the war vessels under his command, and that too in a climate so destructive to the health of the non-acclimated.

“ U. S. SHIP SARATOGA, }  
ASPINWALL, N. G., Aug. 12, 1857. }

“ SIR—In compliance with your request I send you a tabular statement of all the diseases that have been treated on board of this ship from September, 1855, to the first day of August, 1857, (23 months.) You will perceive that only one death has occurred during this period.

“ This ship has been stationed at Aspinwall and San Juan for a considerable portion of this time. These two ports are usually considered to be the most sickly of Central America.

“ Last year was the most unhealthy ever known on the Isthmus, and notwithstanding the “Saratoga” was anchored in the harbor at Aspinwall during the whole of the sickly season, from the 23d of July to the 18th of November of that year, only one death occurred, and that from a disease not peculiar to the Isthmus. If ordinary care be taken of one’s health, I am of opinion that no more risk of disease and death is incurred here than in the seaports of the United States, and that the much-dreaded fever of this port, is, if properly treated, not as formidable as the ordinary remittent fevers of our own country.

“ There is a vast difference between the navy and the merchant service, with respect to health. The crews of men-of-war are not allowed to visit the shore, or to freely indulge in bad rum and fruit, as is the case with merchant sailors, who are under no restraint in these particulars, consequently the former are much less liable to disease than the latter.

“ The daily average number of men on board this ship has been about one hundred and ninety.

I am, sir, very respectfully, &c.,

G. WILSON KELLOGG,

Surgeon U. S. Navy.

Commodore H. PAULDING,

Commander-in-Chief Home Squadron U. S. Navy, Aspinwall.

TABLE 12.

*Recapitulation of diseases, &c., treated on board the United States ship Saratoga, from September, 1855, to July 1st, 1857.*

Febris, Intermittens, . . . . .	45	Phthisis, Pulmonalis, . . . . .	2
do Remittens, . . . . .	121	Palpitatio, Cordis, . . . . .	1
do Continua, . . . . .	9	Insolatis, . . . . .	2
do Communis, . . . . .	2	Meningitis, . . . . .	1
Erysipelas, . . . . .	7	Epilepsia, . . . . .	1
Nausea, Marina, . . . . .	4	Neuralgia, . . . . .	5
Debilitas, . . . . .	5	Delirium Tremens, . . . . .	2
Tonsillitas, ac., . . . . .	12	Imtatis Spinalis, . . . . .	1
do chr., . . . . .	1	Cephalalgia, . . . . .	30
Dyspepsia, . . . . .	11	Pernis, . . . . .	7
Gastritis, . . . . .	7	Intertrigo, . . . . .	2
Cholera, Communis, . . . . .	3	Lichen, . . . . .	2
Heptatitis, chr., . . . . .	1	Ecthyma, . . . . .	2
Splenitis, . . . . .	1	Herpes, . . . . .	2
Constipatio, . . . . .	34	Eczema, . . . . .	3
Diarrhœa, ac., . . . . .	84	Furunculus, . . . . .	53
do chr., . . . . .	10	Abscessus, . . . . .	34



Dysentery, ac., .....	3	Ulcer, .....	20
do ch., .....	2	Tumor, .....	1
Colica, .....	23	Rheumatismus, ac., .....	34
Hæmorrhais, .....	8	do ch., .....	41
Asthma, .....	2	do syphilet, .....	2
Bronchitis, .....	4	Odontalgia, .....	51
Catarrhus, ac., .....	44	Otitis, ac., .....	6
do ch., .....	1	do ch., .....	4
Paronychia, .....	9	Surditas, .....	2
Adenitis, ac., .....	5	Concussio Cerebra, .....	2
Anasarca, .....	1	do Gastris, .....	1
Gonorrhœa, ac., .....	10	Vulnus incisum, .....	17
do ch., .....	9	do punctum, .....	14
Paraphimosis, .....	2	do contusum, .....	23
Urethræ, strictura, .....	6	Hernia, .....	1
Syphilis, primary, .....	6	Fractura (patella), .....	1
do secondary, .....	1	do (radii), .....	1
Orchitis, ac., .....	7	Subluxatio, .....	21
do ch., .....	5	Contusio, .....	35
Varicoccele, .....	1	Ambustio, .....	3
Opthalmia, ac., .....	16		—
Otalgia, .....	7	Total, .....	963
Pleuritis, .....	2		==
Pneumonia, .....	1		

Out of all of which only one proved fatal and that was the case of Meningitis.

“ U. S. S. CYANE, OFF ASPINWALL, }  
May 15, 1857. }

SIR:—A sojourn in this part of some six months having afforded opportunities for forming an opinion as to the sanitary condition of the climate, I beg to offer the following as a memorandum, limiting attention particularly to the bearings of the subject upon the health and longevity of those attached to the naval service on this station.

The malign influence of the climate *on shore*, to natives of northern regions, has certainly not been over-rated, as few such emigrants can endure it for any length of time with impunity. The more robust and vigorous may resist it for a while, but the sickly aspect and bilious complexion of such persons show but too plainly the influences to which they have been subjected.

There can therefore be no question that the risks of life in a locality surrounded by decaying vegetation, and stagnant water, with a tropical sun constantly developing their poisonous properties, are largely increased. It is difficult to imagine a combination of circumstances more detrimental to health.

These remarks apply to the white northern emigrant alone, and *while on shore resident*; but viewing the question in relation to those attached to our men-of-war, cruising along the coast and touching at the various ports, the case is materially altered. The discipline observed, and the sanitary regulations enforced in such vessels, have so disarmed these dangers as greatly to decrease the relative mortality. A stronger case in point could hardly be adduced than is afforded in the present cruise of this ship. Leaving Boston in 1855 for the West India station, she has been about twenty-five months in commission, and has visited numerous ports where malignant diseases prevail, *yet, not a man or officer has lost his life, either from disease or accident during the entire cruise.*

It is but fair to state that some few chronic cases were transferred on shore for hospital treatment, but this does not materially affect the general statement.



The healthful conservative influence of these sanitary regulations, is fully borne out and proven by the statistics in the Navy department to which I respectfully refer you, if further evidence is needed.

I happened while serving in a subordinate capacity at the medical bureau of the navy to compile the mortuary statistics of the various stations. On the coast of Africa the ports of which are well known to be the most deadly to the white race, the average mortality was less than that of any other foreign station, which may be ascribed to the fact that there, and there only, a regular sanitary code has been drawn for the government of every squadron detailed for that coast, and rigidly carried out.

It is by no means pretended that the hazards are not increased by a protracted stay in the climate, exposed to the debilitating effects of an unaccustomed high range of temperature. In the course of time it must gradually weaken and undermine the system. Besides, the utmost caution that can be observed in protecting the crews of vessels from the invasion of epidemic disease, will sometimes prove ineffectual; but if the statistics I have alluded to are examined, it will be found that the mortality in men-of-war cruising in sickly regions of the world, bears no sort of proportion to that which obtains on shore.

To enter into any estimate of the comparative risks incurred under the circumstances referred to, on the one hand, and those to which one would be liable in the more healthful portions of the United States, would involve a more elaborate statement than I suppose you desire. If the simple memorandum which my experience here enables me to give, happens to meet the object of your inquiry, I shall be gratified.

I have the honor to be,  
Very truly and respectfully yours,  
S. R. ADDISON,  
Surgeon U. S. S. Cyane.

Commodore H. PAULDING,  
Flag Officer and Comm'r-in-Chief Home Squadron,  
Off Aspinwall, New Granada.

U. S. SHIP "WABASH," }  
February 16, 1858. }

SIR:—Agreeably to your request I hereby give a statement of the diseases which accrued among the crew of the ship from October 1st, the period of my first report, to the 5th of January, of this year, while she was on the coast of Central America.

TABLE 13.

Febris Intermittens,.....	11	Abcepus,.....	2
“ Remittens,.....	2	Ulcers,.....	4
“ Communis,.....	2	Tumor,.....	1
Tonsillitis,.....	3	Rheumatism,.....	11
Hepatitis,.....	1	Lumbago,.....	2
Constipatis,.....	1	Neuralgia,.....	3
Indigestion,.....	5	Canis,.....	1
Diarrhoea,.....	14	Paronychia,.....	3
Dysentery,.....	2	Syphilis,.....	1
Colica,.....	3	Architis,.....	1
Cholera Morbus,.....	1	Opthalmia,.....	5
Pleurodinia,.....	1	Olitis,.....	3
Palpiatio,.....	1	Odontalgia,.....	1
Lichen Tropicus,.....	10		
Herpes,.....	14	Total.....	131
Phleymon,.....	22		



Of the above cases only one proved fatal, and that was remittent fever, complicated with pneumonia and hepatitis.

I am very respectfully, your obedient servant,

G. R. B. HORNER,

*Surgeon of the Fleet.*

To Commodore HIRAM PAULDING,

*Comm'r U. S. Naval Forces, Home Squadron.*

These three cases show that under intelligent sanitary regulations men's lives can be prolonged in an unhealthy community, no matter if the number of men should be one thousand, ten thousand, or a hundred thousand.

Now in regard to our present sanitary officers, I wish to speak of them personally with all the respect that they are entitled to. And I will say that the head officer has administered the affairs of his office better than any *non-medical man* that has been in that office for years; but yet I maintain that he is as incompetent to discharge the duties of his office as I would be to build a steam engine; that it would be just as sensible to take a shoemaker to be the engineer of a steamer running from here to Europe, as it would be to put this gentleman in that office.

Mr. ELY—Who are you speaking of?

A. I am speaking of the present city inspector. Now, sir, men in the ordinary matters of life act with some discretion and prudence; but it does seem that when we come to the question of life and death we act with the most perfect carelessness. A man when he wants his watch repaired does not take it to a shoemaker; a man does not employ a doctor to erect his building. The fact is, that in other matters men employ persons who are familiar with that particular branch of labor which they want to have performed. Now where is the necessity of having a non-medical man to perform duties that are strictly sanitary? It has been said that medical men would not perform those duties because they were, as was stated, degrading. Does not a physician in his daily duty have to look into the chamber used by the patient and stand over the stench arising from a dysentery discharge which is most noisome, in order to treat his patient correctly? proving that he is willing to perform anything which duty demands of him. Talk about medical men not discharging their duties!—why sir, it is an outrageous slander upon the profession! I deny that there is any business or profession in the world where more sacrifices are made than in the medical profession. Look at the evidence afforded at Norfolk while the yellow fever was raging there; thirty-six physicians, many of them volunteers, and none of them hoping for any reward other than the consciousness of having performed their duty, remained at their post and fell, stricken down by death. Can you find men who will sacrifice themselves in the same manner? The world has not shown men of that kind.

DR. GRISCOM (interposing)—Out of the profession.

DR. McNULTY—Yes sir, that is what I mean, and in the profession there are hundreds of them. Of course I am not complaining of the present city inspector appointing non-medical men, because in the very nature of the circumstances he cannot understand the duties of the office which he holds. I believe he administers the affairs of that office in a manner which he considers right and just; but in my humble judgment he has not the slightest knowledge of the duties which the office imposes. In other cities where the subject of public health is understood, and where they appoint medical men to the sanitary offices, we find that the health of the inhabitants ranges far above that of the people of this city; and I have shown you that ever since the time when a medical man left the office of city inspector, the scale of mortality has been getting worse. Now sir, I wish



to quote from the health laws of this city to show what the board of health and commissioners of health and city inspector are by law :

§ 1. " The legislative powers heretofore vested, by any existing law of this State, in the board of health of the city of New York, other than as the same are hereinafter modified or altered, shall be vested in the mayor and common council of the said city of New York. (1850, ch. 275, § 1).

§ 2. " The said mayor and common council, when acting in relation to the public health of said city, or in the execution of the said powers, or those hereinafter conferred, shall be known as the board of health of the city of New York, of which ten members shall be necessary to constitute a quorum. The mayor shall be the president of such board, and shall have power at any time to convene the same. (*Same ch.* § 2).

§ 4. The president of the board of aldermen, the president of the board of assistant aldermen, the health officer, the resident physician, the health commissioner and city inspector, shall be the commissioners of health. (*Same ch.* § 4).

By this section of the law the city inspector is a commissioner of health. It was clearly the intention of the law that he should be a physician, as he is placed among the physicians that form a large majority of the commissioners. I wish to show that the city inspector has the power to remove the causes of disease, had he the requisite knowledge. I find, on looking over the health laws, that there are nearly laws enough to cover this whole ground if they were properly and thoroughly carried out ; but you cannot have them carried out by a man who is not scientifically educated, and who is not acquainted with disease.

Mr. MATHER—You don't think, then, it is necessary to have the legislation that was spoken of?

A. Not so much sir, as I at first supposed, for I find that there are laws in existence, which cover much of the ground. A few additional laws are required, together with the faithful discharge of the duties prescribed in those laws ; and for this you must have men scientifically educated. They must know what causes disease before they can intelligently remove the evil. The health laws of this city provide that :

" 3. It shall be the duty of the city inspector, on complaint being made to him, or whenever he shall deem any business, trade, or profession, carried on by any person or persons in the city of New York, detrimental to the public health, to notify such person or persons to show cause, before the board of health, at a time and place to be specified in such notice, why the same should not be discontinued or removed, which notice shall be a notice of not less than three days, (except in case of epidemic or pestilence, the board of health may, by general order, direct a shorter time, not less than twenty-four hours) and may be served by leaving the same at the place of business or residence of the parties to be affected thereby. Cause may be shown by affidavit, and the order of the board of health shall be final and conclusive thereon.

" 4. The said city inspector to give all such directions, and adopt all such measures for cleansing and purifying all such buildings, lots and other places, and to do or cause to be done everything, in relation thereto, which, in the opinion of the mayor and the commissioners of health of the city, shall be deemed necessary. Every person who shall disobey any order of the city inspector, or of the board of health, which shall have been personally served upon them, to abate or remove any nuisance in the manner and at the time described in such order, shall, on complaint of the city inspector, or of the person serving such order, before the mayor or any police justice of said city, be liable to arrest, and summary punishment by fine, not exceeding \$1,000, or imprisonment not exceeding one year, or by both such fine and imprisonment."



Thus, the city inspector is a health commissioner, and he has the power to abate nuisances if he only understood how to do so. I believe that if Mr. Morton understood the causes of disease he is the very man to remove them, for he has the energy necessary to accomplish that object. I believe if he was possessed of the requisite knowledge, Mr. Morton would, in less than three years, bring up the mortality of this city, so that instead of there being one death in 27 of the population, there would be but one in 40, for he has made improvements which other medical men who have held the office before him, have not made. But what can you expect? Look at the list of health wardens which I obtained in the city inspector's office six months after his election, and see the occupations of some of the persons who hold those important offices. Many of the names could not be found in the directory, although their residences appeared on the list.

These may be very respectable persons, having political influence in their respective wards, but I do maintain that a man cannot perform the functions of a health officer except he understands the principles of health and disease. Are carpenters, grocers, watchmen, or eating-house keepers fitted by education to meet this requirement?

Mr. ELY—I believe it is admitted that all these health wardens are non-medical men?

A. Yes sir.

Dr. GRISCOM—There never have been medical men in these offices.

Dr. McNULTY—I will not enter into a recital of the diseases which might be prevented by judicious sanitary precaution, for Doctor Griscom has spoken of them. I will simply say that I fully endorse all that he has said.

But I will give you my views in answer to the third question, which refers to the remedies to be employed. The only additional legislation that I see is particularly required, is, in the first place, a law requiring all sanitary officers of the city of New York proper, to be legally qualified medical men; I use the term "legally qualified," because there are many practicing regularly, who are not legally qualified for these positions. The second point would be, to compel the health wardens to vaccinate the poor, gratis, and to keep themselves always supplied with pure vaccine *viridis* for that purpose, and also a provision compelling the people to submit to vaccination by the health wardens, or their family physicians; that the health wardens should have authority to prevent all communication with persons having small-pox, except by nurses and the necessary medical attendants. (That the board of health can do now, but they have first to be notified that the case exists.) Small pox is a preventable disease, and I think that by a judicious law of that kind the evil can be eradicated. I have omitted much that I could say, because I am anxious that Dr. Rotton, who desires to leave, should be examined.

Mr. ELY—Would you have this vaccination compulsory?

A. Yes sir.

Q. Suppose the people refused to be vaccinated, what would you do?

A. I would have measures taken to have it enforced. Dr. Newman in this report says of this subject:

"Compulsory vaccination can alone reach and remove the evil. It is the right of the community, as well as a duty it owes to itself, to protect itself from the evils of such a contagion, and destroy the sources from which they spring. This is a matter in which our rural population is as much interested as those who dwell in cities. They are liable, if unprotected, to experience the full severity of an attack, and the inquiry is pertinent, whether they do not suffer *more* than the citizen, in consequence of the greater alarm and excitement it produces when it makes its appearance in the country."

Now sir, last winter when the state medical society recommended this



subject to the Legislature there were presented personally to many of the members, and before the joint committee of both houses, several cases in which persons had taken small pox in the country from clothing obtained in the city. Mr. Dayton, a member of the Legislature from a district over the river, had a son who died by disease in that way, and there were other cases brought forward. It is a common thing for the wholesale clothing merchants in this city to do very little business when the small pox breaks out in the city, for the country merchants will not buy clothing under such circumstances, as it is known that those who make the clothing are so situated as to be most likely to contract the disease. Mr. Garret told me of two or three cases of this kind occurring in North Carolina from clothing bought in this city.

I would close by reading the conclusion of Dr. Newman's report, as expressing my own views in a brief manner, on this subject of sanitary reform. He says:

"In concluding this report, I wish, not only for the benefit of the public, but as an act of justice to our profession, to advocate the appointment of medical men upon our local boards of health, and confiding the matters appertaining to the execution of sanitary police regulations to the hands of the profession. I advocate this not only as a measure for the benefit of the public, and from which they would be actually the greater gainer, for the studies and pursuits of the physician are such as must eminently qualify him over any other class of our citizens for the discharge of such duties; but as an act of simple justice, and as a recognition upon the part of the public of the value of the services daily rendered by the profession, and directed toward the preservation of the health of the people. From medical men are expected to emanate every measure designed to prevent, as well as cure disease, and their labors are constantly as much directed toward this end as to the cure of a malady when once developed. These labors are too often unrequited except by empty thanks, and these too often are forgotten to be bestowed. The public is too well satisfied to accept these labors as a gratuitous-matter-of-course; and occupy every post of profit, though they legitimately belong to those who so freely labor in their behalf.

"The liberality of the profession is proverbial, and regardless of self, they cheerfully labor in every department which may assuage human suffering and dry up the sources of disease and death; still, physicians are not exempt from the commonest wants of humanity, and are as much dependent on their labors for their support, as any other portion of the community. I boldly contend that to the physician belongs the post of honor and of profit conferred by the constitution of any sanitary commission, board of health, or any other office which is designed to devise and execute hygienic laws.

"These posts are now too frequently given merely as the rewards of party service, to men no way qualified by habits of observation and study for the positions they occupy. And the indifference with which our present laws are executed in reference to health matters, springs in a great measure from the ill-adaptedness of the officers to the duties they have assumed to perform.

"Let men be selected from the rank of the profession for these posts, who will bring to the exercise of their duties a laudable professional ambition, and work from a love for their labors, and be actuated by the true spirit of the sanitary physician."

Dr. McNULTY, subsequently said:—The registrar general's report of all England for 1850, shows that in London for one year, there were 1,323 premature births, and in all England 18,014 still births. I procured these figures to show that the still births do enter into their estimate of the mortality there, and for the purpose of refuting the statement made to the contrary by some of the health authorities of this city, who alleged that these



cases were not noted in London, while in New York they assisted considerably in swelling our list of mortality.

In looking over that report, I chanced to see the number of births over the number of deaths, which in all England in 1850, was 224,427.

We have no register of births here that can be called such; but I would feel warranted in asserting it as a fact, that our births would not exceed our mortality in the same ratio; that is to say, our increase of population is more by emigration than by birth, and theirs by birth, more than by emigration. The inference I wish to draw is, that if left to the increase of the population by births, New York would not present as rapid an increase of population as London, for the reason that the ratio of infantile mortality is so much greater in New York than in London. There has been a calculation made by some one, that in 36 or 40 years the city of New York would be depopulated, were it not for its immigrant population.

Dr. GRISCOM—That is from the report of the city inspector, which is manifestly incorrect.

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### TESTIMONY OF DR. SAMUEL ROTTON.

Dr. SAMUEL ROTTON said—I have so little left me to say with regard to the first question, as Dr. Griscom and Dr. McNulty have so ably and so fully answered it, that I do not think it is necessary for me to occupy your time with a single remark.

With regard to the second question, I would reiterate merely some of what has already been said. The chief reasons of our mortality are, no doubt, that a great number of the inhabitants of the city of New York live with the smallest amount of air that is necessary to keep life in them, and the smallest amount of light with which they can possibly see and get along with; and these causes have been proven by Dr. Griscom to produce much greater mortality than bad food or bad clothing, because the people who have lived in the same way with the same food and clothing in better localities, have been seventy-five per cent better with regard to mortality than those who have lived in cellars and other dark unventilated and miserable places. I wish to reiterate that, as it is one of very vast importance, during the cholera summer of 1849 I was appointed cholera physician to the seventh ward in this city. During the three months of that visitation I visited the whole ward; there was hardly a house in it that I did not attend. I knew that the mortality was very great in cellars, and when I found a patient in a cellar it was my invariable practice to have him immediately removed; and when such a case was not removed, I do not know of a single one that recovered. The reason is obvious. In many of them I was obliged to wade my way upon bricks, before I could stand upon the floors, for the water would cover my feet. I remember especially two cases where the patients were almost devoured alive by rats in those cellars. In 1849 I attended a great many patients who were attacked with typhus or ship fever. There I found the same facts hold good; all whom I could not remove from the cellars died; whereas, those who were situated in well ventilated places turned out much better. I will give one instance, to show the importance of air. In a dark, dismal room or opening in a back alley way, two men lay sick with typhus fever. I continually impressed, while making my visits, from time to time, upon these persons the great necessity for air, and yet on my return each day I found the windows again closed, the door closed, and a number of persons living in the same room with the patient. At last I became so exasperated that with my stick I broke out every pane of glass in the upper portion of the windows. My patients gradually improved, and both recovered.



I have been making a great deal of investigation lately with regard to milk, having been appointed one of a committee on that subject by the academy of medicine; and I find that mothers and nurse women living in dark places, and especially in damp cellars, (but even darkness alone will produce the result,) have not near as good milk as those in healthful places. The milk of a woman in health is always alkaline, while that of a woman living in dark cellars invariably becomes acid, showing that it is abnormal, and showing that darkness and dampness will produce disease, and that the secretions of the woman for food for the child is unhealthy. I have not seen a healthy child in those places. The children are generally troubled with mesenteric disease, usually called disease of the bowels. I do not find this acid in the case of healthy children. I wish to lay great stress upon that matter, for I think it has a great influence upon the increase of the mortality in the city. The same principle is observed in the milk of cows. I have examined 500 specimens, and I have yet to see where they are alkaline; every one is acid. The same is true of the milk of goats. A goat was confined three days for bad behavior; before that its milk was alkaline; during that time it was acid, showing the effect of darkness upon milk. I need not multiply these cases; physicians have previously proven so conclusively and repeatedly that darkness will produce scrofulous diseases that every one who has read anything upon that subject is well acquainted with the fact. Any man or animal being shut up in a dark place will contract such disease, and such is particularly the case with the lower animals, such as pigs.

With regard to the causes of disease among us, there is another, and one in which the whole of the community is interested. We have now a great many, and are getting more city railroads. They have driven the stages from most of the routes where these railroads run. The cars are constructed on a different plan from the stages, are more tight, and hold a larger number of persons. I do not know of one in the city of New York that is constructed for the purpose of ventilation. There are some which are partly ventilated; there are some which are entirely devoid of any ventilation whatever. Those cars are common carriers. I am obliged myself to ride on them every day, but most frequently in the winter season I prefer to ride outside rather than to sacrifice my health inside where the air is so foul. And here I wish to make a single observation with regard to the city inspector. I think the reason he has not abated this nuisance, is not that he had not the executive ability, but because he has not known of the existence of the nuisance. It is the duty of these railroad companies to provide for the health of the citizens whom they carry.

With regard to the observations made by Dr. Griscom and Dr. McNulty on small pox, I wish to say a few words. It has been asked whether where compulsory vaccination has been resorted to, has it produced beneficial effects? In the Prussian army, in 1837, there were vaccinated forty-seven thousand and some hundreds of individuals. During the whole of that period there was not a single person attacked with small pox, and but seven with varioloid; while, during the whole of the time small pox was almost an epidemic in Prussia, conclusively proving that compulsory vaccination did produce beneficial results in 47,000 cases, and it might have produced the same results had it been applied to double or treble, or four times that number.

I would take this, sir, as conclusive proof that errors do exist, and that the present sanitary officials are not capable of removing the evil. And that these evils are on the increase in this city, the decrease in the mortality tables show; but this is not because of unwillingness on the part of these officers to correct the error, but on account of utter inability to per-



form the duties. It would save no lives to the community or improve the sanitary condition of the city of New York, if the city inspector and all his officials do all that they can do upon the subject, unless they know all that can be known upon it; and *that* their previous education utterly unfits them to acquire. I do contend that a medical education and a *medical education only*, will fit him to know those things that are necessary for a proper sanitary regulation of the city.

There is another view to take of this matter which Dr. Griscom has not so thoroughly enlarged upon. There are many, many diseases which by timely interference on the part of those who knew what they were when first called to see them, would be entirely prevented, especially the most malignant diseases, by having them isolated and properly attended to; and I think the difference in the prevention would be greater than the number cured after the disease has taken a deep hold of the patient. The authorities of France, England, Germany, and other places, have called to their aid in this matter, learned, able and scientific men. The sanitary commission of Paris is composed of the most eminent medical men in Paris; the sanitary commission in London is composed, particularly the head of it, of the very best physicians, those who have left their mark in the profession. I contend that the whole sanitary offices in this city should be filled by medical men. It has been proven by emulation in the city of London, that no man incapable of holding a sanitary office can hold one; for the emulation is so great that no non-medical man is able to bring to it that learning and energy and ability and industry exhibited by those medical gentlemen who hold those offices. The consequence is that the non-medical man must resign, and the offices are filled by those who are competent to take charge of them. I can fully agree with Dr. McNulty that the present city inspector has done very much better than many of those who have preceded him; but, at the same time, I say that no person who is not a medical officer is fit for the position, because, let him do to the utmost of his power, he cannot know or do all that is necessary to be known and done.

DR. ROTTON.—(Resuming after a pause.) The city inspector says he never rides in those city railroad cars.

MR. SCHELL.—Has the city inspector power to abate the nuisance?

DR. ROTTON.—Yes sir, he has the power if he knew how to do it.

DR. GRISCOM.—The same objection with regard to bad ventilation is found in our school houses.

MR. ELY.—Do you think that the system of warming houses, by heaters in the cellars, is very pernicious?

DR. ROTTON.—I believe that hot air is, perhaps, to a certain extent where it is heated by steam, but I do not think it is as dangerous as when heated by air.

DR. GRISCOM.—I wish to state a case that came under my observation last spring. A patient was brought in from one of the most elegant hotels in the city of New York, sick with confirmed typhus fever. He was a servant in the hotel. On being asked how he spent his hours, he said that from 12 o'clock in the day till 12 at night he was down underground in a billiard room, which from its darkness had to be continually lighted with gas; and from 12 at night till 10 in the morning he slept in the attic where there was no window. All the servants slept in similar places. There is another large hotel where its eating room is entirely below ground, where the sun never enters the room, having to be lighted with gas during the entire 24 hours, and where the people enter little boxes on the sides, draw the curtains and thus shut themselves up while eating, the very time when they most require fresh air.

Q. But the air is not vitiated by being hot, is it?



DR. GRISCOM.—The air is just as pure when warm as when it first enters the room, but the difficulty lies in non-ventilation.

Q. What is the character of the heat derived from anthracite coal?

DR. ROTTON.—The hot air is exceedingly dry; the heat from that coal is of a red character and serves without modification. The heat is not derived from the flame, but from the incandescence of the coal. The nature of the chimney allows of but very little ventilation.

Q. Do you remember the case where one of the aldermen died in the chamber of the board, and the whole of the members dropped their heads on the desks, when somebody jumped up and opened the window?

DR. GRISCOM.—Yes; that was caused by the emanation of foul air, there being a leak in the pipe. Dr. Jones, one of the police surgeons, lately visited a policeman who was sick, and who had lost his wife and nine children in the deep rear cellar where he was.

DR. ROTTON.—I could mention other cases equally strong.

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### TESTIMONY OF DR. ISAAC WOOD.

MONDAY, *October 25, 1858.*

DR. ISAAC WOOD was called, and in answer to the first question, “Do you regard the condition of the health of this city as inferior to that of other large cities in this country or in Europe?” said:—For an answer to this query I would refer the committee to an able report of DR. NEWMAN, of Buffalo, which gives better statistics on the subject than I could give; and also to a report of Dr. Barton in respect to the sanatory condition of New Orleans. These reports would give more, ten fold more, than I could furnish you on this topic. It is an unquestionable fact that our city is more unhealthy and has a larger ratio of deaths than other cities of the Union.

Q. Are you aware of the sanitary condition of Rhode Island? That that State is reported to us as the most healthy State in the Nation?

A. That appears to be the fact, but my knowledge is only obtained from Dr. Newman’s report.

Q. As compared with other cities, the health of New York, is inferior, in your judgment?

A. That is the fact, as will be seen by reference to the statistics on the subject.

Q. Are you prepared to assign reasons and causes, and to give authorities for your opinions on this subject?

A. I am not prepared to give a definite opinion on this matter; but I believe that the want of ventilation, the filthy condition of our streets, and the filthy condition of the lower orders of our people has a tendency to produce pestilence; but I am not prepared to assign causes on that subject. The manner in which our poor live, is perceptible to every one of common sense. Our buildings are erected over the whole of the blocks, so that no free passages for air and ventilation are left. Then again, people sleeping in rooms badly ventilated—a number of families in one room—and there being no other channel through which air could pass but the door, it cannot be otherwise than disease should be the consequence. Also, the practice of living under ground is very injurious to health. I would suffer no families to live under ground; no person ought to go under ground to live until he goes to his last resting place. The want of ventilation and cleanliness in streets, buildings and persons, are causes which I would assign more than anything else for the increased mortality in this city. The absence of light is also deleterious to health. Then again, I have no doubt



that the wetting of the streets as much as we do, is an active agent in producing disease. The streets ought only to be washed, not kept wet, for keeping them wet is only increasing a tendency to the putrefaction of all matters that lie on the surface.

Q. Do you believe that by some additional sanitary regulations, and a better administration of the laws, as they exist, with some additional legislative acts, we could prevent the spread of disease?

A. I am not acquainted with the health laws of this city, and hence do not know what additions might be made.

Q. Do you believe Doctor, that introducing medical knowledge and science into the offices of public health, would be beneficial?

A. I have no doubt of the fact. It appears to me that a man who has devoted his energies and his life to the investigation of the causes of disease, would be better calculated to apply remedies in removing disease. It appears to be common sense to think that.

Q. If the health wardens were medical men, would they not be able to detect the disease and apply the remedy?

A. It would be beneficial to make such appointments I have no doubt, but I do not wish to be understood as saying that if health wardens were medical men, they would prevent diseases altogether.

Q. Please suggest remedies for existing evils, and what can be done by legislation or otherwise, to remedy these evils?

A. In answer to that question, I would say in brief, all the departments relating to hygiene should be under medical responsibility. So it strikes me.

Q. Do you think that all the persons filling the office of health wardens should be of such character and capacity as to enable them to apply the preventives to the extension of small pox?

A. This question brings to mind an interesting item in my experience. When I was physician to the dispensary, and attending to my patients, I visited a sick woman and in the same room a child was born previous to my visit next day. I vaccinated that child, which was only seventeen hours old, and it took the kine pock as well as any child I ever saw. The small pox was in the room, of which I had no knowledge the day I made my previous visit. The disease was in the room when the child was born, and so far as I know, the child was protected. I never vaccinated so young a child before, but was justified in doing so under those circumstances. The health warden might have been in my position, and if he had understood the nature of these things, saved that child. This case happened to occur to my mind from the fact of your naming small pox; I did not think of it before I came here.

Q. Are you aware of the condition of emigrants that come here, whether any legislation is necessary to guard them from extending disease among us?

A. I have not thought much of that matter, but it is a fact that when emigrants arrive here, they crowd into close, confined rooms. I think that proper attention to the construction of buildings, and to ventilation, would very much remedy that evil, for they would then go to the places which would be adapted to them, whereas, now they crowd into these dirty holes. And generally their clothes are impure as they come from shipboard, even if they have not infection in them.

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### TESTIMONY OF DR. JOHN W. FRANCIS.

Dr. JOHN W. FRANCIS testified as follows: In answer to your first question, I reply most positively that the health of New York is inferior to that of other large cities. The city of New York does not compare in point of health, with other great cities of the Union, independent of those



abroad. Philadelphia is healthier; Boston is healthier; Baltimore is also much healthier. When I wrote an account of the city of New York, in 1832, I put down the mortality as one death in thirty-five and a half of the population, which was published in the encyclopedia. If I were now to write the statistics of the city of New York as to health, I should say that the mortality was one in twenty-seven or twenty-eight. I am not quite minute enough in the last calculation; perhaps 27.50 would be correct. I believe the latest works giving statistics of the mortality of London, give the mortality about 41 or 42, and London is healthier than New York. London, during the time of Dr. Johnson, was far more unhealthy than it is now. I think it must have been one in thirty-two or three at that time, and now London is about one in forty. London, within the last century, has improved certainly as much as 1 1-7.

Q. Are you acquainted with the relative mortality in Paris?

A. I have not looked at the statistics in reference to Paris. Paris is a little better in point of health, than London, and that is all I could say.

In reply to the second question, "Are you prepared to assign reasons and causes, and to give authorities for your opinions on this subject?" I would say, a more crowded and dense population than formerly, must be looked upon as a prominent cause; a more crowded condition of buildings, a more crowded population in the same space of ground and in the same buildings, and less ventilation than formerly, has produced unfavorable results in point of health. The Americans are going to try to live without air. It is enough to kill a doctor to enter some of their rooms.

Mr. SCHELL.—Does not the go-aheadativeness of the Americans increase mortality, to a certain extent?

A. Yes sir, we will come to the mental causes by and by.

Dr. FRANCIS continued—Another cause of disease may be found in the elongation and extension of docks; the whole border of the city seems to be crowded with a vast amount of corrupt and foetid materials. It was thought that the sewerage would improve this city very much, but the beneficial effects of sewerage are counteracted by additional inattention to cleanliness, and by greater humidity in the city from watering the streets too much. The city is aggravated in its troubles for physical infirmities by the large quantity of water that is distributed and left around; there is too much humidity. The foul state of the docks lead to a large extension of foetid materials; hence the benefit of sewerage is defeated very largely. I think a forcible illustration of what I say may be found in the fact that imported contagions are always more rife round about docks and places of that kind; and I believe, on examination, it would be found that not a single visitation of yellow fever from the year 1791, when it took place at Old Slip, down to the yellow fever of last year, that it has ever been unconnected with shipping; but the pestilence is more rife there, because it is where the material is first indoctrinated or introduced. I might go on to an indefinite length of time and cite additional facts to substantiate this statement. It is a very remarkable fact that so far as the pestilence of yellow fever, the great enemy of this city, is concerned, that yellow fever has never been known to originate in any local spot, however filthy the space. Yellow fever is a specific disease. Not a single case of yellow fever has ever been known to occur on made ground, from the time that Governor Colden practiced physic, in 1845. All the made ground in New York has never produced a case of yellow fever; but the poison emanating from the bulks of ships from abroad being discharged, then the materials of our docks give it extension, and as it has the power of assimilation, the disorder is capable of spreading. "But it does not do harm," you may say. I answer that the accumulated animal and vegetable matter will



augment disease, because man is a respiratory animal, and the condition of the air either shortens or elongates life. This city was more healthy when there was more vegetable life about it. Every tree that you cut down you diminish the quantity of vital air for this city. The crowded condition of the manufacturing interests of this city help to add to the impurities of the air; the crowded condition of the workshops and the crowded state of the number of persons employed in them, are among the prominent causes for the increase of disease.

But there is another important fact to which I wish to call the attention of the committee, and that is, THE UNDER GROUND RESIDENCES OF THE PEOPLE IS A SAD CALAMITY TO THIS CITY, and this remark I would have printed in large letters. It is astonishing to see how diseases are superinduced by living under ground, and that is particularly the case in reference to a large class of febrile diseases. And this under-tenantry is a great source of the increase and extension of typhoid forms of disease. It is wonderful that the people of New York are not willing to be in the ground when they are dead, but they want to be in the ground before they are half born, by living underneath.

Then again there is another most stupendous calamity that has occurred to this city; it is partly known to the learned chairman of the committee. This whole island has been cut down instead of being left in a more elevated plain. When a cellar is dug out, they don't know what to do with the earth. The city has been cut down to low water mark, so that now the whole city is partially submerged. In the spirit of improvement they have leveled too many hills and brought the city too low—hence, the greater necessity of guarding against so much cellar residences. These are the two great primary physical causes.

There are great mental causes which shorten life in New York. It is the archeus of the Union—the grand centrum for the mighty operations of the whole confederacy. There is a greater expenditure of mental energy and power in this city, than in any other place of the same number of inhabitants in the whole entire world. There is an over-wrought condition of the mental powers; there is a hurried action through life. It is not merely the heart that is called into active operation, driving pell mell with a hurried circulation, but it is the poor brain that is over-wrought. Hence, the enormous influence of high ambition—great defeats—great disasters; so that the system lives in a state of commotion. And every man who has been a practitioner among the lowest and the highest, will have observed that the poorest wretch with sixpence in his pocket, is often in a far more happy frame of mind and of physical comfort, than the rich denizen of the Fifth avenue. There is a high order of ambition in New York, and I think mercantile integrity in this city is on a great scale; and to preserve that, physical health and comfort are often again and again sacrificed.

The deleterious effects arising from unfilled and sunken lots, is quite perceptible. We have often seen the tenacity of pestilential diseases more protracted and more formidable in cases where these sunken lots and pools of water and so on, were left uncared for, for it must be remembered that humidity aggravates calamities of that sort.

Q. Some of the physicians who have testified have laid great stress on the want of light. What are your views on the subject?

A. Light is a great source of life, and wherever there is darkness or the light is feeble, there is an aggravated condition of illness. People will not live as long in dark places as in light ones. You know how light operates upon vegetables, and it operates upon human beings in the same way.

Mr. SCHELL—We want to pass a law regulating sanitary matters which will benefit the city and the whole country, and it is for every one's interest



that it should be done ; but as the poor are generally ignorant, they might say we were taking away their rights, or what they suppose to be their rights. Men of intelligence would submit to a certain extent to the passage of a law for that purpose, but the lower classes might say they were being robbed of their rights, and claim such a step as tyrannical. Would it not be proper for your profession to suggest that these tenement houses shall be licensed ; that tenants should not be liable for any of these improvements, and that tenement houses shall not be used unless they are in a proper condition to preserve the health of the inmates ?

DR. FRANCIS.—I think that these places ought to be looked after just as much as certain other matters which are regulated by laws. I think the rule you suggest would be a very proper one. It is certain that tenement houses ought to be under personal surveillance, and should be built according to certain sanitary restrictions.

MR. ELY.—What do you suggest as remedies for such evils ?

DR. FRANCIS.—In pointing out the several sources of the evils, the remedies, to a certain extent, suggest themselves. Inasmuch as the several sources of these causes increasing mortality in New York are pointed out, they respectively suggest the remedies. On this subject of health, you will perceive in various works and distinct treatises on the subject, that public hygiene has become a great subject abroad, and that more and more the governments have placed these matters largely within the co-operation of official medical men. Dr. Thompson in 1811, '12, '13 and '14, was almost the original projector and suggestor of the beneficial agencies arising from medical men taking a view of the medical topography of places, and pointing out the means of benefiting the places where the inhabitants thought fit to occupy them. Medical topography and the doctrines of hygiene ought to be understood. And this naturally leads to another great point, that to a certain extent unquestionably there ought to be medical men engaged in these things. It is impossible for a common citizen to comprehend all the philosophy of light, heat, dryness, humidity, concentrated miasmas, marshy effluvia, and its science. Medical men of a sound capacity ought to have more or less control in these matters. London is nearly one-third healthier now than in the time of Dr Johnson ; and what am I to think of the progress of science abroad. London has never been as bad at one time as New York has been recently.

MR. ELY.—Have you any knowledge of the sanitary condition of the city of Liverpool ?

A. Not very specifically.

MR. ELY.—I have been informed that the mortality is even greater than our own ?

DR. FRANCIS.—Liverpool is one of the most deplorable places for health in the whole world. You could hardly have cited a worse place. The prevalence of inflammatory disease and pulmonary affection surpasses even that of this country ; it surpasses New York, and Boston. It is a crowded marshy city, and the great amount of trade in Liverpool makes people very indifferent to health, as they are also in New York ; I can account for it in no other way. There are a vast quantity of mental causes operating to render Liverpool unhealthy. There is an acrid air, too, in that city, that is productive of a vast amount of disease. I would like to state that the immense arrival of destitute and penniless foreigners with large families and feeble children is one of the causes which adds largely to our mortality. The number of imbecile people of that kind is very great. I will mention another cause. This highly over wrought brain demands an undue quantity of stimuli, and the intemperance existing here cuts off very many. I do not think, however, that lager beer is so injurious as some might suppose.



Mr. ELY.—Do you think it would be possible to prevent the manufacture of adulterated drugs by legislation?

A. Yes, I think you could. Offer a great reward and you will find out anything! Adulterated drugs ought to be considered among the causes which add to it. The laws regulating the inspection of drugs seem not to be duly enforced.

I would like to state that I consider New York, barring the accidental circumstances which have contributed to render it a city of great mortality, particularly within the last twenty years, to be by nature one of the most salutary places on which a city can be located. All the earlier writers, in noticing this place, have lauded its natural climate, its situation, the sparse nature of its diseases, and its exemption from consumption. Dr. Colden said that this was a climate to cure consumption. I want to state that the city of New York is a great locality for health, if it was properly cherished.

With its two mighty currents, it is eminently calculated for that purpose. Therefore, as these causes are adventitious, they are capable, in a great degree, of being removed; though there are peculiar circumstances, where very many persons crowd together, that cannot exactly be overcome.

Mr. SCHELL—What is the effect of licentiousness—criminal indulgence—in this city, with regard to mortality?

A. New York is bad enough in this respect, but not so bad as some places. I should think that all these excesses would naturally shorten life, but I do not think you can get reliable statistics on this subject. I would mention that I think the mortality of this city is increased by the malpractice of certain designing persons, interested in producing premature births and the like. That swells the mortality. I think that the improper and the unwarrantable use of ergot to facilitate labor, is another great cause of adding to the still-born births. The unwarrantable use of ergot and other drugs in producing premature labor, and for the concealment of nefarious ends, has also added largely to our mortality. It appears to me that the more you look at this thing, the more it summons to your consideration to recommend to the constituted authorities an organization of medical police, that shall correspond with such an alarming state of facts, to counteract them. You will have, to a certain extent, to more or less recommend medical men for the discharge of this duty. There is no chance of your getting men out of the line of the profession to know anything connected with these affairs.

Q. We have heard the comparison with regard to the mortality of New York, London and Paris. Have you the power to state the condition of our charitable institutions, in comparison with London and Paris?

A. I think the statistics, which have been published from time to time, (particularly the latest), strengthen the fact set forth some time ago, that the medical statistics of our hospitals show a greater average of recovery than many of the institutions abroad. I think, for instance, that the Bellevue hospital is more successful, shows a higher state of professional result, than that of the *Hotel Dieu*, in Paris.

I think that insanity is on the increase in this country in a greater degree than it is abroad. I have looked at that subject carefully from time to time. I think the highly wrought excitement of our people, the nervous temperament, the increased active mental energy of our people, the high ambition for power, for place, and for wealth, by their consequent disappointments have led to a positive increase of insanity within the last twenty years. I think also the great use of alcoholic drinks has very largely increased it; and hence there is a fallacy sometimes brought forth that we are much more successful in treating insanity than they are abroad; but we must remember that we have in our favor those cases of insanity which



result from intemperance, and that form of insanity is more curable than what we call *special insanity*.

Mr. ELY.—Is there any difference made between these two forms of insanity abroad?

A. No sir, the honor of making two distinctions will be left to the American mind. The hospital now in course of erection, at Binghamton, in this State, is the precursor in this great thing, and I think that by its establishment we will make a line of demarcation in these diseases, and thus bring additional honor to our State.

Q. Is the modern system of heating buildings detrimental to health?

A. It is a serious detriment to good health and longevity.

Q. Has not the heating of our buildings a tendency to produce paralysis?

A. It has a tendency to produce a morbid circulation and congestion of the brain. Our heated air apartments are a sad drawback to general health.

Q. Have you any knowledge of an increase in the use of arsenic, opium, and other drugs, in this country? It has been asserted that there has been a large increase in the use of such drugs.

A. I am of the opinion that there is a great increase of opium eating in this country, which is a drawback on health and life.

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#### TESTIMONY OF DR. SIMON BACHELDER.

Dr. SIMON BACHELDER testified as follows:

Q. Do you consider the health of New York as inferior to that of other cities?

A. I do sir.

Q. In what particular do you think it is inferior?

A. I think that there are a great many reasons why this city is less healthy than either Boston or Philadelphia. I do not think that I am competent to speak in relation to the statistics on the continent of Europe, but I think that this city, according to the statistics that I have noticed, is not as healthy as London.

Q. In comparison with cities on this continent, how does New York appear?

A. I could hardly compare it with other cities, except Philadelphia and Boston, and perhaps Baltimore. The condition of the health of the two former cities would enable us to arrive at conclusions as safely as any other cities that could be mentioned. The climates of Philadelphia and Boston are different when compared with ours. The climate of Philadelphia is much more mild and equitable than the climate of Boston. The climate of Boston is cold, east winds, &c., prevailing. Boston is very much colder than Philadelphia.

Q. Is it more variable than New York?

A. I think it is a good deal more so. I have been conversant with the climate of Boston, and somewhat so with that of Philadelphia. If I were to assign a reason why Boston is more healthy than New York, and why the city of Philadelphia is more healthy than New York, I would say that the Quakerish shrewdness of Philadelphia, and the Yankee shrewdness of Boston, tend very much indeed to prevent the causes of disease. The inhabitants of Boston are very much more cautious to be more warmly clad and to avoid exposures than we are here. In Philadelphia the same kind of shrewdness prevails. The location of Philadelphia is more level than this; there are more physical causes of disease there than there are here, independent of the temperature of the climate. These are reasons that



have occurred to me why these two cities are more healthy than this ; the reasons why this city is more sickly and why there are more deaths in New York than in other cities. It seems to me that New York should be the healthiest place in the world ; that there is no place in the world where seven hundred thousand or a million of people could be collected together and be so healthy, so exempt from disease and death, as the city of New York.

Another cause, it appears to me, is the manner in which the buildings are erected ; the manner of constructing the tenement houses and the practice of a great number of people living under ground. It seems to me that the reasons of our unhealthiness are almost all capable of being removed by sanitary measures. A large proportion of our houses are built very high and on the street ; they are well built and have cellars beneath, and have three or four stories ; but there are tenement houses, perhaps 30 or 40 in the rear, six or seven stories high, one story under ground and an under cellar ; these buildings have a great many small rooms, and a great number of people are crowded into them. The elevated position of these houses prevents a free circulation of air. The tenement houses are so elevated in front that the sun light of heaven does not go into those places only as it were by accident, and but for a short space of time every day. I deem the light of the sun and its heat and warmth, of very considerable importance ; but perhaps that would not be considered as of as much importance as the free circulation of air. All the people who occupy the lower portions of tenement houses and all who occupy the rear of the houses on the street are subject to those two causes—the prevention of the free circulation of air and of light. I believe it has been remarked—and certainly it accords with my own observation as a professional man—that diseases, especially fevers, &c., are very much more apt to attack persons who live in low stories than those who live higher up ; diseases are more fatal there than anywhere else. It has been remarked by some of the medical gentlemen that when the yellow fever was here, in 1832, there were very few persons attacked with the fever in the upper stories of houses, and I can readily conceive that to be so.

These then are causes which have increased mortality and sickness, which might be removed, it seems to me, by legislation. If legislators could prohibit the building of residences for the poorer classes in the manner in which they are now erected ; if they would prohibit a very large number of persons from living in each house, a great cause of sickness would be prevented. The licensing of these tenement houses, as has been suggested by the Hon. Senator, (Schell), might be attended with a very salutary effect, so as to throw the responsibility in a great measure upon the landlords. If they (the landlords) can get tenants into their buildings and get their pay, very little do they care whether the occupants live or die, if they only pay the rent for the time being.

Mr. ELY—Speaking in regard to the occupancy of the first floor of buildings being somewhat prejudicial to health, is it not customary to keep hospital patients on the first floor ?

A. That is true in a great many cases, but then the ventilation is perfect. Go into the New York hospital and you will see ventilation as perfect as possible. I would just as soon lie on the first floor of that building as in any other portion of the hospital. I have no doubt, too, that a person living in the Cooper institute would be as healthy in one portion of it as in another. That building is ventilated by steam and the attention which Mr. Cooper has paid to this matter, speaks well of his skill and benevolence.

Q. You think that the health department of this city requires a sanitary officer and medical men ?



A. I do. There are other causes which I think have a considerable influence upon the health of the city. They have been alluded to by Dr. Francis, and perhaps it is hardly necessary for me to speak of them. I believe it is laid down in all our medical works on various diseases that heat alone does not produce sickness, unless it is very extreme, under peculiar circumstances; but heat combined with moisture is required to combine in order to produce fevers and malarious diseases. That is one reason why our sewerage is not so effective as it might be and ought to be.

Wet streets, slops thrown into the gutter and allowed to stand in cess pools; they by vapors and various other ways produce sickness. There are some other causes, perhaps. It is unnecessary to allude to intemperance, the sale of ardent spirits, &c. That is a prolific cause of disease in New York. Other causes have been alluded to, such as the procuring of abortions, and so forth. Every physician knows very well the great extent and prevalence of that evil; but I do not know that I can suggest a remedy for it, as it is carried on secretly.

There is another cause that I believe has not been particularly mentioned, although Dr. Francis alluded to it. I think that the prevalence of syphillitic diseases in the city has a great deal of influence, and the poison of it has its influence on other diseases. It extends to families and persons who are innocent in themselves.

Mr. ELY—What would you suggest as remedies for these causes?

A. As I have stated, nearly all these causes are removable, and may be abated; a great proportion of them may be in a great measure removed. There are one or two other causes, however, that I would mention, one of which is diet. Our markets, I am well satisfied, are not under that surveillance that they ought to be. We have distillery fed beef, and swill milk, which is not proper food. The beef that is sold in our markets, together with other bad meats is a very prolific cause of disease.

Q. With reference to that one item, I suppose that it would not be necessary to have medical men to attend to that department?

A. Not entirely; a gentleman who knows very much about these things, informed me that a great deal of the beef that is sold in the markets is not saleable. He also intimated to me that certain persons whose duty it was to prevent the sale of that meat, neglected their duty. A person who was conversant with the matter, could easily discriminate between the qualities of the meat; swill fed meat might be distinguished by its color, and those who are conversant with the matter tell me they can distinguish it by the smell, and I have no doubt of that fact.

I have already stated that almost all of these causes are removable; and a great many of the causes are detectable only by medical men. Their studies lead them to investigate the causes of disease, and it is impossible for any man who is not a medical man to detect a great many of them. A man of common sense will say that this thing and that is unhealthy; he has learned it by his acquaintance with life and mankind, but still does not know the reasons for his conclusion. Vitiating air produces disease in a certain way, which no man, who is not a medical man, can comprehend. It seems to me, as has been suggested, if a medical police were established, or health wardens appointed, who were medical men, with a head who would direct them in every way, that a very large proportion indeed of all these causes of disease might be prevented or removed. It appears to me to be a perfect absurdity to appoint a shoemaker, or cooper, or livery stable keeper, as health warden; it is an outrage upon common sense and common honesty to do it. A great many of these causes are allowed to exist for the want of men who do not do their duty.



Q. Do you think that the laws are sufficient if they were properly enforced ?

A. With some additions, and their proper enforcement, I think they are. It would be to the interest of medical men to enforce the laws, if they were placed in that position ; and if you can back a man's philanthropy by his personal interest, you succeed in doing an important thing. There are medical men in this city who do business to the amount of three and four thousand dollars a year, and they never get a penny for their services ; and if these causes of disease were removed, they would get rid of doing this service. It would be a pecuniary consideration for medical men, as well as an exercise of their philanthropy, to look into these evils and cause them to be abated and removed.

Q. Do you know what additions could be made to the health laws ?

A. I am not acquainted with the sanitary laws to answer that question, but if the existing laws are not sufficient to accomplish the object, additions should be made to them. I do not know the particulars of the laws in relation to the erection of buildings. I think there should be a proportion between the width and the height of the street in the erection of buildings.

There is one other cause, but that is not peculiar to New York ; it is a practice among druggists to sell poisonous articles. They sell chloroform, opium, strychnine and arsenic, to anybody that comes, and there are very few questions asked about it. I think that they ought not to be allowed to sell any poisonous article, unless it is by the prescription of a physician. I think the law ought to reach them. I do not know actually how a law could be made to reach men who adulterate medicines. In fact, a very large proportion of the medicines that come into the country, I am satisfied, are adulterated, and I am convinced that they undergo a second adulteration when they come to this country. It is the practice with myself and a good many other physicians, to send prescriptions to particular shops, where I am sure the occupants are competent to determine whether medicine is adulterated or not, and also honest enough not to sell anything that is adulterated.

Q. Do you know whether, in a few years, there has been an increase in the quantity of opium and arsenic used as stimulants ?

A. I am not able to answer that question definitely of my own knowledge. The impression upon my mind is that the poisonous influences have been increased of late, but I do not know that I could cite any authority for that conclusion.

Dr. McNULTY remarked—Infants are unable to resist the action of surrounding deleterious influences and fall ready victims to them ; whereas the adults can resist them more successfully.

The president of the Mutual Life Insurance Company, told me they selected its members with great care, and the result is that their percentages of loss are less than they are in London. I intended, when I gave my testimony, to state that where judicious care is taken to select adults only from sections where they have all the advantages of health, that the ratio of mortality is not necessarily great. The State loses as much in losing an infant as in losing a man, because that infant, if he lives, will be a man.

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#### TESTIMONY OF DR. JAMES L. PHELPS.

Q. Do you regard the condition of the health of this city as inferior to that of other large cities in this country or in Europe ?



Dr. PHELPS—I should judge from the reports of deaths, that we are all in a worse condition than almost any other city.

Q. Do you know in what particular diseases our mortality is greater than other cities, or to what particular classes of people it is confined?

A. To the poverty stricken part of the inhabitants.

Q. You think that the mortality is greater among that class than among others?

A. Yes sir, the reason is obvious. They live in places which those that are in better circumstances would not live in, such as cellars, garrets, and confined places where there is no ventilation and where there is a great excess of filth of all sorts. They live in the worst streets and the worst houses; they are the worst fed and the worst clad; and if they are sick they have no attendance that is sufficient for their recovery.

Q. Are there any other causes that suggest themselves to your mind that produce this greater result.

A. I accord with the observations that were made by Dr. Griscom here a day or two ago. I think the views he took in regard to the different causes which prevail to produce that degree of sickness and mortality were well founded. I concur exactly in Dr. Griscom's views as to the causes of increased mortality.

What would you suggest as a remedy for these existing evils?

A. Well, sir, the remedies would be perfectly obvious to an ordinary understanding. It would be necessary to bring about a change in regard to the domiciliary condition of the inhabitants of those parts of the city where the mortality is the greatest. That could only be done by proper laws and regulations, and a provision in regard to the erection of buildings, and every thing of that kind. The amount of filth in certain parts of the city is wonderful, enormous—festered in every corner, it cannot well be otherwise. There will be almost any number of people that you can imagine on a 25 by 100 feet lot, and, of course there is very little responsibility on any individual, because they are poor and miserable. Of course the dirt is thrown about here and there, and each one shirks the responsibility and care that is necessary for cleanliness.

Q. Do you think there is anything in the climate of the city which would be prejudicial to health, more than in any other city?

A. I think New York is most admirably situated in that respect. Only look at it! It is surrounded by water, so that there is a free circulation of air. Our situation in that respect is far superior to any other city; it is only about a mile from any part to the water, and of course the drainage may be complete. If you go clear off to Kings Bridge you can find no place where it is more than two miles broad, and there is a general declivity each way from the centre. With these noble estuaries in every direction, why should it not be one of the healthiest places in the Union instead of being the most unhealthy? That is the view I take of the subject. New Orleans is built upon made ground, and if you dig anywhere into the ground a few feet, you are met by all sorts of *debris* which is festering there through the heat of that warm place, and of course there is an emanation constantly going on from this decomposition. That is a very unhealthy place, of course, from natural causes, and these natural causes are the lowness of the condition of the surface on which the city is built, together with the high temperature of the climate.

Q. I suppose it is impossible to have a thorough drainage in that city?

A. Yes sir; I suppose so. In order to have a reformation on this general subject, in regard to this city, it would be necessary to have proper laws, and that those laws should be executed. There are a great many laws in regard to this subject in this city, but they are not thoroughly executed.



Q. Have you examined the health ordinances of the city to know whether they need repealing or amending?

A. Amongst ourselves, as a profession, we believe that these sanitary matters are matters which cannot be understood except by medical men, and it is quite clear that they ought to be executed by them.

Q. It has been asserted that the health laws of this city were not intelligently executed?

A. Medical men should be the executors of these laws because they understand the whole subject and can know what is wanting to effect a reformation. We get great discredit in regard to New York, because of the mortality that exists. It operates upon those who wish to settle here, for if they cannot calculate upon health or longevity, of course they will shun the place compared to what they would if it was a salubrious place. So in regard to business. If through the neglect of the city in regard to cleanliness when yellow fever, or cholera, or any other disease is epidemic here, of course it is an injury to the place, and people go into the country where they do not apprehend sickness. And these reports are very often greatly exaggerated, so that commercial men are afraid to come to this city. See at a single view what a damage it must be to New York to say that it is subject to all these complaints. The quarantine laws have to be strictly enforced, to the great detriment of commerce.

Q. Does the increased mortality of New York over all the other cities named, detract from the eminence of our medical men; and is it a reflection upon our medical practitioners?

A. It is a reflection upon the whole city at large. The responsibility would have to be divided amongst those who have a vote in carrying out our laws and public matters.

Q. Then you do not doubt that our medical men are as skillful as those of other cities?

A. I do not doubt that we have as eminent medical men here as in any other city. Foreign physicians may make a more elegant diagnosis of disease, still the talent of a practical nature is in our physicians. In some foreign countries medical men think that American physicians are not as well educated as they are themselves, because they, (the foreigners) divided their education up into several departments. The physician will be a good deal like the people he lives with, and the community in which he resides. Dr. Rush in a lecture, observed on the subject of quackery, that in New England there was little or no quackery, but there were a great many quacks that came from there, confirming the idea that as is the community so will be the talent and education of the practitioner.

Dr. McNULTY observed: Physicians going from this country to Europe with all the medical honors that they can obtain, do not get that respect to which they are entitled, and if they get attention paid to them, it is as much from their social position as from their professional character. They do not receive that credit they are entitled to. Whereas the truth is, give the same physicians a certain number of patients and the like number of European physicians the same number of patients, and the American men will cure more patients than the London physicians. That is my judgment. They bring up our mortality as a reason for saying that the physicians of this country are less eminent than the Europeans, and they say that our system of education is not so thorough as theirs, and that we do not go through all the various departments in the same length of time. They affirm that where the city of New York possesses the greatest talent, we have the greatest mortality.

The American physician has not so many of the accomplishments as the



European physician. When the European physician comes out of school, he is full of accomplishments, yet he has but little practical ability, while the American physician treats disease practically.

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### TESTIMONY OF DR. W. D. BIBBINS.

In answer to the first general question Dr. W. D. BIBBINS said he considered that the health of the city of New York was inferior to that of other large cities in this country and in Europe.

Q. Are you familiar with the statistics of disease in the different cities, such as Philadelphia, Baltimore and Boston?

A. I often see the returns of the mortality of Boston, Philadelphia and Brooklyn, and compare them with the mortality returns of this city.

Q. Can you give us the ratio of deaths in this city?

A. It ranges from 20,000 to over 23,000, but I cannot give you the exact figures.

Q. You consider this city more unhealthy than either of the other cities you have named?

A. Yes sir.

Q. Are you aware what cities are considered the most healthy in this Union? The city of Providence, Rhode Island, has been mentioned as showing the best statistics of health. Do you know anything on that point?

A. No sir.

Q. But you are clear in the opinion that this city is more unhealthy, in proportion to the population, than any other city?

A. The mortality of this city is larger, sir.

Q. In regard to the second general question, what facts are you prepared to present?

A. I would state first sir, that the emigration to this city is one great cause of the mortality. The people in damp emigrant vessels are usually crowded together. Bad air is generated on board the vessel, and when they arrive they are often in a very impaired condition of health, much more so than the same number of persons would be dwelling as they generally do upon land. And then again, the sick and the infirm of the emigrant population is left in New York; a large proportion of it, at least, adding to the mortality of the city. And this company of people, their health being somewhat impaired by the voyage, if they carried on board with them any epidemic disease, contracted before embarking, will be very likely to have that disease among the passengers during the voyage, and they will be likely in their impaired state of health, to suffer from any epidemic disease that may be prevailing here when they land.

Q. What cause do you find in the municipal regulations of the city to induce disease?

A. The bad air in the dwellings, sir, is one great cause. The census returns, I find, very positively state that a larger number of persons live within a suit of apartments in a tenement house in this city than in any other city in our country; and therefore, there is a less number of cubic feet of air for each individual; and where persons are crowded together they suffer from the exhalations of the body, which are really poisonous. So that these persons are not as favorably situated as their children are during the time they are in the school houses. And I have seen the effect of such foul air at the nursery on Randall's Island. When it was full, so that the children were crowded together with four in a bed, on entering these rooms early in the morning the impurities of the air were perfectly



evident; and the health of the children evidently suffers from this crowding together.

Q. You regard ventilation, then, as essential to the preservation of health?

A. Very, sir; and too many persons should not be crowded into one apartment, for the greater number of cubic feet of air that can be allowed to an individual will be more favorable to health.

Q. Do you regard as injurious to health generally, the fact that, in consequence of the abundant supply of water in the city, the streets are kept wet, and the apartments of houses rendered humid?

A. That is true, sir, in a degree. The Croton water pipes are often obstructed in the houses; the water is evaporated in too large a quantity; the air in the rooms, as well as in the entries and gutters, is too humid. Not only is the health injured because of the large number of person in single rooms, thereby generating bad air, but there is thereby a greater accumulation of garbage in front of the houses in which they dwell, and the excrementitious matter in the privies is larger than in any other city, owing to the fact that there are more persons congregated in dwelling houses together.

Q. Is it not customary in all large cities to have the privies arranged with pits, as ours are, or so that they connect with the sewers below?

A. I only know with reference to this city.

Q. Do you know whether in other cities they are or are not?

A. I am not prepared to answer the question, for I have no information on that point. Then, sir, another cause of sickness in this city is, that the basements of new houses, in streets where sewers have not been built, are often occupied, and the dampness from that cause frequently make patients sick, and they suffer in their health from that cause. I cannot speak with reference to the cellar population that we have in this city. Another cause of our bad health is, that many of these persons have been accustomed to a simpler diet before they emigrated to this country, and when they come over here they begin to use everything as food that is found in America. On Tuesday I saw three cases of disease produced by eating articles that were sold out of a wagon, probably on the previous Saturday, for the evidence of that fact was as strong as it possibly could be.

Q. Do you know of anything in the climate of New York that would make its mortality greater than that of other cities?

A. The climate is not as equitable as that of London, I believe, sir. I cannot speak of other cities with precision.

Q. You would not consider this an unhealthy climate?

A. No, sir.

Q. Are there any other causes that suggest themselves to your mind now?

A. I do not think I can recall any at the present moment, sir.

Q. What course would you recommend to be pursued as affording the proper remedies for the existing evils?

A. A detachment, as far as possible, of the city inspector's department from the municipal political offices.

Q. You mean by the city inspector's department, the general health department?

A. Yes, sir, I refer to that department which has charge of the cleaning of the streets.

Q. That is the only health department we have at present?

A. Yes sir, I have thought of two different modes of the appointment of subordinate officers. The governors of the alms house render their subordinate officers very efficient, and I think it is because the board is equally



divided as regards political views. Then I thought, in regard to the fire department, that it is rendered more efficient because the foremen of each company are allowed to nominate the person who shall be chief engineer when confirmed by the common council. I have thought whether the thing was practicable, and whether it would not be better for the academy of medicine to nominate to the common council in a similar manner a suitable man for the head of the health department. And until proper medical men are appointed to the chief and subordinate offices, men who are thoroughly qualified for the discharge of the duties, you cannot expect much improvement in the sanitary condition of the city.

Q. Are you conversant with the health laws at present in existence in this city?

A. The manner of their execution, do you mean, sir?

Q. I wanted to inquire whether you thought any further legislation was necessary beyond the changing of the officers under the existing laws?

A. I can say this, sir, and you can make your own inferences from the fact which I state: Of those who have a knowledge of disease in the city of New York, there are none who possess so much as the visiting dispensary physicians. They are the only ones who report in regard to the prevalence of epidemics. And, sir, they have a larger practice than any private physician in this city, and the number of cases of disease which they see is larger. And then their time is not taken up with other business as is the case with other physicians.

Q. Is this city districted by the dispensaries?

A. It is, sir, as far as those districts extend, which is from the battery to 20th street, on the east side, and from 20th street, on the west side, to Bellevue.

Q. How many dispensary districts are there?

A. I think fifteen, sir.

Q. Why is it districted? Is each one of these districts under the control of some particular physician?

A. Each dispensary has its part subdivided, and a physician appointed to each district.

Q. You think these dispensary physicians would make very proper and efficient health officers?

A. They would, sir, or any who had been dispensary visiting physicians. It is not absolutely necessary to appoint *them*, but in consequence of the nature of their duties, they are better acquainted with the condition of the city. And another thing that should be mentioned is, that they have no fear of epidemic disease, at least very little, if any at all. Non-professional men are afraid of epidemics. I have seen a man, sir, when a case of epidemic disease was presented, leave an institution in this city; or rather, I would say that a non-professional man would leave an institution under such circumstances. If that would be true in regard to public institutions, it would be much more so in regard to the residence of the patient, when the person was called to visit the case of disease. But I would remark that whatever I have said must not be interpreted as referring to the present city inspector, particularly, for I have no ill feeling towards that gentleman.

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#### TESTIMONY OF PROFESSOR ALFRED C. POST.

Prof. Alfred C. Post said:

The mortality returns show a larger amount of mortality in N. York, in proportion to the population than in any other city, I believe, of temperate climate,



and yet I regard that our situation is admirable with reference to salubrity. It has the advantage of lying between two rivers, having naturally a very pure atmosphere; no city is better situated for natural ventilation than our own, and a part of our population shows as large an average amount of health and longevity as any city in the world. Take that portion of our citizens who reside in broad and airy streets, in spacious mansions; and indeed I have been struck with the remarkably large number of instances of persons obtaining advanced age in the neighborhoods in which I have lived.

Q. Then you think the excessive mortality is confined to certain localities?

A. Yes sir; and to certain classes of society; and the matter is to a very great extent, under the control of our municipal authorities. If such could be kept out of the path of party politics, things could be regulated with a little desire to promote the health and save the lives of our citizens.

Q. Then you think the excessive mortality is produced by causes that might be remedied?

A. Yes sir. The chief causes are: impure air, improper food, and the intemperate use of strong drinks. The impure air arises partly from the condition of the streets, and partly from the overerowed and filthy condition of the interior of houses in courts and alleys. The condition of our streets is proverbially filthy. Those who merely pass through our principal thoroughfares can hardly have any intelligent idea of the wretched condition, and excessive filth of the streets and houses occupied by our poor population; and especially in the summer season, the filth that is collected there, when the hot sun shines upon it, gives rise to most poisonous exhalations. There is a bad practice when the streets are swept, of leaving the most of the filth in heaps to be scattered over the street again, instead of having it carried away immediately after it is swept. I have sometimes seen the streets left for several successive weeks in that condition, the filth having been spread over them again by the constant passing of vehicles, &c. It is sickening for persons who are accustomed to live in a pure atmosphere, to pass through these filthy streets, and especially so in summer.

Q. You think there is a want of efficiency on the part of the proper authorities?

A. Very great sir; especially in the spring, when all the accumulations of a long winter are left to remain on the streets. When we have hot weather in April and May, the odor arising from the accumulations of the preceding season is horribly offensive, and those are the streets where the greatest mortality is. Besides the natural accumulation of filth in the streets from the dung of horses and other animals, there are vast collections of refuse matter—offal from houses, peelings of potatoes, the refuse of cabbages, and all those things which the rag-pickers and hogs do not carry off,—that are allowed to accumulate in very large quantities. In such streets as Mulberry and Mott, and those in the Five Points, avenues A, B, C, and D, and the streets crossing them, you will find very large accumulations of filth and garbage. But other streets are better. Of course these sources of disease are perfectly under the control of the municipal authorities if they exercise due vigilance.

Another fruitful source of disease is the foul air in the interior of houses caused by their being crowded very much, and also by the want of proper ventilation and ablutions within the houses. The emanations that are given off from the body itself, will vitiate the air in all places where a number of persons are congregated together where ventilation is imperfect. It is a very common thing for the poor to sleep in small apartments which are long enough for a bed and a few other articles, and they have their kitchen and parlor in a room adjoining where they cook, eat and sit. There are no windows in their sleeping apartments, except a small window opening into



the hall. And not only there are no windows, but no ventilating place in the walls. It would diminish the evil very much if their sleeping apartments were required by law to have ventilators in the wall, which would run up to the roof of the house. It should be made obligatory to have ventilating places in the walls. And there could be some oversight to prevent the accumulation of filth in and about the premises. The expensiveness of rent of course compels the poor to seek contracted accommodations. The sources of impure air are found in the streets, on the docks, and in the interior of the premises occupied by the poor.

Then there is a great deal of improper food and unhealthy fruits and vegetables, and fish and other articles of unhealthy food being peddled in the streets in carts and wagons; in hot weather they are often very stale before they reach the houses of those who purchase them. I suppose that might be remedied by determined exertions on the part of the municipal authorities.

The amount of sickness and death caused by intemperance, is a matter that has occupied the attention of the public authorities as well as private philanthropists. I do not think any additional light can be thrown upon that.

Q. Are you familiar with the present health ordinances of the city?

A. No sir, not in detail. I merely know that there is a very great deal of negligence in regard to their execution, whatever the laws may be. I think there is very little probability that any ordinance would be effectively carried out except by medical officers.

In relation to the subject which Doctor Bibbins alluded to; the fear which some persons have about going near a case of epidemic disease; I would say that medical men in general have no such fear. It is a very rare thing to find a medical man who is cowardly. A great number of our young physicians fall by exposure to disease; they feel it to be their duty to expose themselves whenever their aid is required.

Q. Do you know any reason why small pox should be any more prevalent in New York than in any city of the same sanitary regulations? Is there any thing in the climate which would conduce to that result?

A. No sir, nothing in the climate. I suppose a want of vigilance in ferreting out the diseased localities, and a want of compulsory vaccination are the most fruitful sources of this disease.

Q. Do you think compulsory vaccination would be practicable?

A. It is practicable in other countries. In Prussia and other countries, they were almost decimated by small pox before it was introduced, and now in those places vaccination is almost universal. Children are not allowed to enter the public schools, nor are persons received into the employment of the government unless they can show that they have been vaccinated.

Q. Is there any place in our own country where it is compulsory?

A. I do not know of any, sir.

Q. Do you know anything about the condition of other cities in regard to this disease?

A. In Boston last year there was only one death by it. As far as the public schools are concerned, I think there would be no great obstacle in the way of introducing it into them. I think they could refuse all scholars who could not give satisfactory evidence that they had been vaccinated.

There is another point with regard to the extraordinary sources of impure air. There are some portions of the island where there are manure heaps; I know there is one in Thirty-ninth street, and I suppose there are others in various parts of the city. The most unhealthy exhalations arise from these places, and they are evils which certainly should not be tolerated.



Mr. MATHER—What is your impression that the percentage of deaths should be here under proper sanitary regulation?

A. I think it ought to be as favorable as in any other city. It ought not to exceed one in 40 of the population. In a healthy rural district the percentage I believe is one in 50.

Q. What legislation would you propose to bring about such a state of things?

A. I suggest that there should be a city inspector and health officers, who should have charge of every district of the city, who should be medical men, and be appointed in some way if possible, to guard against mere politicians being entrusted with those offices which should be filled by men who would regard their own reputation and character as well as the interests of the city; and that regulations should be adopted for their guidance which should require the frequent sweeping of the streets, and the removal of the filth immediately after they are swept; the cleansing of the docks and slips; the inspection of the habitations of the poor; tenement houses; and in fact all houses which are occupied by more than two families; and that there should also be regulations with regard to the sale of unwholesome food which should be carried out; and that as near an approach be made as can be made to compulsory vaccination. Small pox is a disease which is perfectly under control, if the proper regulations are devised and carried out.

There is one source of mortality which Dr. Bibbins stated, that is undoubtedly true. That is that there is in this city a transient population which leaves behind it the most of its subjects. We have a body of several hundreds of thousands persons passing through the city, the healthy ones to a very great extent proceeding to the interior of the country, while the poorest remain behind; and we should expect a large mortality among those who are left.

Dr. GRISCOM—Would you not argue from that the necessity of a branch sanitary commission to meet that very want?

A. Undoubtedly. Even supposing that the ordinary causes of disease and death were more rife here than elsewhere, we should expect a larger amount of mortality from that cause; and it is from that source that New York derives its reputation of having a large mortality, to a very considerable extent, over other cities in the interior, or even over other cities where the emigration to them is so much less. And the salubrity of New York vastly exceeds that of Philadelphia; the city lies more favorable as regards ventilation, and the health of the surrounding country is better, and the heat of our summers is not so intense; and if you take certain wards which are kept comparatively clean, which are inhabited by a class of people who live comfortably, I think the average duration of life is large. I have lived for many years in one of a block of houses where there was an average of more than one in a house who reached the age of 70 years, and some lived to over 90. I think that is not an unfair specimen of some of the better parts of our city. In our reports of deaths you will find that a very large proportion of the mortality is put down and appear as natives of the United States, but many of them are infants and young children of foreigners, who are exposed to all the pernicious influences of recent emigration here. If the young children of foreigners could be associated with foreigners, you would find the mortality among natives would be vastly diminished, for children under two years of age to a very great extent swell the mortality table.

Dr. GRISCOM—Is not the infant mortality due to the character of their residences a great deal?

A. Very much, sir.



Q. They are native children mostly who die under one and five years of age?

A. Native children; the children of foreign parents. The character of their food, such as cabbages and bad fruits and vegetables, has much to do with this mortality.

Dr. GRISCOM—I asked the question for the purpose of hearing from you whether an improvement in the residences would save them, although they are the children of foreign parents.

A. It would, undoubtedly, to a very considerable extent.

Mr. ELY—Have you anything to suggest, Professor, in regard to our system of sewerage? Can that be improved in any manner?

A. There is nothing that occurs to me, unless there is some gross carelessness with regard to opening sewers, leaving the filth lying about the man-holes exposed to the action of the sun, which ought to be removed promptly in covered carts, for it is very offensive. The system of sewerage, thoroughly carried out, I regard as highly conducive to health.

Mr. MATHER—Where it is imperfectly carried out, it conduces to disease, does it not?

A. Yes sir; if the traps are pulled up and the emanations from the sewers are allowed to gather in the streets, it becomes sources of contamination to the air. I believe sir, that plumbers are licensed, are they not?

Mr. ELY—I think not.

PROFESSOR POST—I was going to suggest a very important improvement in the construction of houses, in plumber's work, which I think would add very much to the salubrity of houses, and I have it introduced into my own house. That is to have in the traps below the water-closet, foul air pipes conducting to a chimney or flue, so that the emanations would be carried to the top of the house. I have had offensive odors in two houses emanating from the water closets, and by tapping it and carrying it by a flue or chimney to the top of the house, the foul air was carried off, and of course was not offensive or injurious. Some of the plumbers are not aware of this improvement. I suggested it as original, as far as I was concerned, and I found the benefit of it.

Mr. ELY—Do your views agree with those of the other physicians in regard to the injurious effects of the humidity of the streets? Do you think their excessive moisture is injurious to the health of the citizens?

A. Yes sir; I think the carts used in watering the streets carry too much water; and instead of merely laying the dust, they put too much water on, so as to wet your shoes sometimes. I consider it so great an evil that rather than subscribe to have the streets watered I prefer to have that in front of my door not watered at all. If the stones were clean and the water put on lightly, watering would be very well; but where there is a great deal of mud, the water is converted into more mud which retains the moisture, and keeps the streets unclean constantly.

Q. The general use of hot air was mentioned. Can you give us any information in regard to that?

A. That is not found in the houses of the poor to a very great extent. It is used principally in large houses, and there is no complaint of general insalubrity among men who occupy such houses.

Mr. MATHER—Do you think houses heated with furnaces were as healthy?

A. I think they are more so if great care is taken to guard against excessive heat. I think if you can have the doors opened instead of being obliged to sit with closed doors, you have a purer atmosphere than with a fire in the room. I am quite confident that in my own family, those of my children who have been born since the introduction of hot air, are better in



## TESTIMONY OF DR. JOSEPH M. SMITH.

"In Providence, R. I., the proportionate mortality to population was, in



TABLE 17.

1853,	one in.....	43.20
1854,	" .....	36.67

“ In Baltimore it was as follows :

TABLE 18.

1836,	one in.....	42.75
1837,	" .....	37.80
1838,	" .....	39.39
1839,	" .....	44.23
1840,	" .....	50.12
1841,	" .....	46.76
1842,	" .....	43.29
1843,	" .....	48.01
1844,	" .....	43.71
1845,	" .....	41.81
1846,	" .....	42.45
1847,	" .....	39.12
1848,	" .....	36.19

“ At Charleston, S. C., from a report of the city register, of the interments for the eighteen years, from 1828 to 1846, it appears that the annual proportionate mortality averaged one in 4411, whereas for the last eight years (1849), the average has been but one in 1852.”

TABLE 19.

“ In 1836,	a cholera year, the mortality was one in.....	52.84
1838,	a yellow fever year,.....	25.05
1839,	.....	35.38

Since then, by a sanitary improvement of the city, for a period of eight years previous to 1849, the standard of mortality has been raised to one in fifty-two.”

“ At Chicago, the comparative mortality for five years, was as follows :

TABLE 20.

1846,	one in.....	43.33
1847,	" .....	34.61
1848,	" .....	38.37
1849,	" .....	18.84
1850,	" .....	21.45

“ In New Orleans, the proportionate mortality, extending over a period of nine years, is as follows :

TABLE 21.

1846,	one in.....	24.18
1847,	" .....	12.02
1848,	" .....	14.39
1849,	" .....	12.42
1850,	" .....	16.59
1851,	" .....	19.05
1852,	" .....	17.00
1853,	" .....	10.39
1854,	" .....	15.22

Now if we compare the mortality of New York, in some years it will be found that there is a great discrepancy in some of the years. (Compare tables.)

There are natural causes occurring periodically, tending to produce epidemics—a very important element in this city—epidemic cholera, epidemic



dysentery, epidemic small pox. Small pox is a contagious disease, and under the influence of periodical peculiar influences about which we know nothing, which pervades after a certain season ; it causes extraordinary fatality. Then again there are other reasons ; there are particular periods within which certain diseases are much more fatal than in other years. Now it might be well to compare the city of Baltimore with the city of New York. In New York the mortality in 1810, was one in 46.49, and in 1835, one in 40.87. In Baltimore in 1836, one in 42.75, and in some years it is about equal with New York. Take Philadelphia, and in 1851, one in 46.10, occurs there, while New York varies considerably, as will be observed by the preceding table. My answer, therefore is, that our mortality is not greater some years than it is in some of the other cities of the United States. The mean of these mortalities I have not taken, or any special number of years.

Mr. ELY—I suppose the fact that the city of New York is larger should be one reason why the mortality should be correspondingly greater ?

A. I cannot see that a large city must necessarily be more unhealthy than a village—*cæteris paribus*—"other things being equal." In order to answer the first question decidedly, I can only do so by looking at statistics, and to be particular I should make an arithmetical calculation, for I find that in the city of New York the mortality is lower in some years than in other cities of the United States, and in some seasons quite as large. In 1850 and 1853 in New York, the mortality comes down to one in 33.52 and one in 38.85, and then again in Baltimore there is not a 33.

Mr. ELY—The mortality is greater in many of our large cities in this country, than in New York ; this city is superior to Chicago and New Orleans.

A. Yes sir. Philadelphia is very healthy.

Dr. GRISCOM—Since 1855 I have down the mortality of Philadelphia at one in 35.

Mr. MATHER—I suppose you are prepared to say the sanitary condition of the city could be improved ?

Dr. SMITH—Oh ! certainly.

Mr. ELY—What suggestions have you to make upon that point ?

A.—Well sir, it is a very extensive question, and would require a great deal of time and reflection, and reference, to answer it in detail. I can say that all influences which are derived from light, and air, and space, and food, and occupation ; that I think those few things would embrace everything. Many of these matters relating to these general heads, are treated of in this report which I have, and are ably treated. And first, I might say in regard to the necessity of ventilation. Perhaps before that it would be well to speak of space. I look at what has been said here and furnished in a statistical way, from inquiries made in London, I think.

"The effect of crowding is shown by a table exhibiting the mortality, and the number of square yards to each person in three groups of metropolitan districts.

TABLE 22.

	Square yards to each person.	Annual mor. tality,	Mortality from typhus alone.
1st group of ten districts, . . . . .	35	3428	349
2d do do . . . . .	119	2786	181
3d do do . . . . .	180	2289	131

Now these effects appear to flow legitimately, from the very fact that space is considered. If the question be asked, How can space have an influence in promoting health ? or how can enlarging it promote health ? and by contracting it will it increase the mortality ? I would reply, it does so



in two or three ways. It does so in the first place by shutting out the light ; in the second place, by lessening the amount of pure, fresh air ; and in the third place, by the accumulation of offensive exhalations from the human body, long confined in the same apartment ; and those three together will generate typhus pestilence anywhere, whether in a house, on ship-board, in a jail, or in any human habitation. The quantity of effete matter discharged or illiminated from the human body by a given number of persons in a given time, may be ascertained with great precision ; and hence an idea may be formed of the extreme danger of crowding human bodies together without ventilation, and, I might say, without light. I have made some investigations of my own on this subject, and I might perhaps venture to say what I attempted in this very important matter. I had first to settle the question as to the danger of confining persons together in small apartments, in close habitations, in compact buildings, in closed alleys, in narrow streets, &c., and the danger which will result from their own exhalations, to say nothing of the bad air or light, or anything of that sort. The quantity of these exhalations is perhaps greater than would be supposed by persons unaccustomed to facts connected with this inquiry. Dr. Newman has thought proper to quote the result of my investigations in my own words, and I suppose I will be permitted to refer to them in this report, as follows :

“ Let us suppose a family, one, of which there are hundreds of examples, consisting of ten adult persons, dwelling in a small, ill-ventilated house, and negligent of personal and domestic cleanliness ; and further, that the time severally passed within doors by the ten individuals, some of whom are constantly at home, while others are temporarily absent, amounts in the aggregate to twelve hours out of every twenty-four. The mass of effete matters thrown out by the lungs and skin, by such a family within their dwelling in one month, is 500 lbs. 4 oz., and in one year 6,083 lbs. 4 oz. Though by far the greater part of these excretions consist of carbonic acid, water, and salts, yet the quantity of ejected animal matter is not inconsiderable. It amounts in one month to 6 lbs, 3 oz. ; in six months to 37 lbs. 11 oz.; and in one year to 76 lbs. 00 oz. 10 pwt. In such circumstances it is, and especially in seasons in which the prevalence of typhus is favored by an epidemic influence, that the disease often spontaneously originates in the squalid homes of the poor.”

Now if you should take this one family with this 6,083 lbs. 4 oz. of effete matter, and double and treble it in that way till you include the whole inhabitants of a whole square the result would show that the quantity of effete matter thrown off by the skin and lungs would be enormous.

But this writer has thought proper to quote me a little further. He says :

“ These calculations have been extended so as to embrace an entire city, from which we make the following quotation :

“ The inhabitants of a densely populated town may be regarded as a single family, living in contiguous or narrowly separated apartments, any number or the whole of which may as certainly be rendered infectious by over crowding, as the cells of a prison. In no mode, perhaps, can the danger from this source of disease be so distinctly impressed on the mind as by estimating the quantity of waste matters eliminated from the bodies of the people of a city in given times. If we assume as a numeral basis a population equal to 200,000 adults, it will be found, if calculated as in former examples, that the entire pulmonary and cutaneous egesta amount in one month to 20,000,000 lbs. ; in six months to 121,333,333 lbs. 4 oz. ; and in one year to 243,333,333 lbs. 4 oz. ; and that the exhaled animal matter alone amounts in the first of these periods to 250,000 lbs. ; in the second to 1,516,666 lbs. 8 oz. ; and in the third to 3,041,666 lbs. 8 oz.”



These I present as facts. And in this way you have a prodigious amount of material passing off from the bodies of men, and passing into the air insensibly, which, with the excrementitious matters sent out of the human body, exceeding 40 oz. from each individual, and a certain number of the facts constitute the basis of this calculation. Then in suggesting a means of correcting all this, he uses another quotation. I say:

“The health of a city depends in no small degree upon the distribution of the inhabitants over an area of sufficient extent to admit of the free ventilation of every dwelling. When such a distribution obtains, and attention is given to personal and domestic cleanliness, a population of 200,000 or any greater number, will be as secure against the invasion of typhus as are the inmates of a commodious, cleanly, and well aired private dwelling. But populate a town as densely as are the alleys and courts of many cities, and the consequence will be that the whole population will feel the influence of an idio-miasmatic atmosphere, and disease be co-extensively produced.”

The report then says:

“It will be observed that the urinary and fecal excretions are not taken into the account as a source of contamination. These doubtless should not be lost sight of entirely as a means of adding to the impurities and seeds of disease otherwise engendered by crowds, for although generally removed from the dwelling, it is only that they may become festering pestilential pits, poisoning the atmosphere and those who breathe it. After making all due allowances for errors, almost inseparable from such calculations as have been quoted, I think we all will be willing to admit that Dr. Smith has proved that man may become a very dirty animal, and that we shall be most fervent to exclaim, ‘that cleanliness is next to godliness.’”

That is my answer to your inquiry. These dwellings that become impure in this way remain a long time exceedingly impure. It is almost impossible, perhaps, to expurgate them thoroughly. Even the very walls of an apartment inhabited by the poor and uncleanly, and hospitals by typhus fever patients will become and remain pestilential. You may vacate the apartment; you may ventilate it, but it will remain infectious for a period indefinite. We have had a striking illustration of this in the New York Hospital; a ward which had been occupied by typhus fever patients and which was in a decidedly pestiferous condition was vacated, and a number of healthy men, mechanics from the city, after the doors and windows were thrown open, and a certain period of time had elapsed, were brought to cleanse and purify these walls. In doing that work how many of them sickened and died I cannot recollect.

Dr. GRISCOM, (interposing)—There were four men employed; the doors and windows were left open for one week; three of the men took the fever and two of them died.

Dr. SMITH, (resuming)—In such cases the only way would be to leave the apartment unoccupied for a long time. Puerperal fever has the same effect in lying-in wards. It is liable to recur in apartments where it has been prevalent, and which have been used for a long time for those patients. Even the very walls become imbued with pestilence to such an extent that Dr. Moultrie cited the fact that in China—I am not quite prepared to state it in his words—that in China the walls of old buildings have imbibed so much animal matter exhaled from the human body that the Chinese actually would tear down and remove such walls and put up new ones, for the purpose of obtaining the remains for agricultural purposes, owing to its great fertilizing property!

Mr. MATHER—So far as personal cleanliness is concerned, legislation cannot cure that.



Dr. SMITH—No sir. There is a point of hygiene to which I wish to call the attention of the committee. How is all this to be corrected?

Dr. MATHER—In other words, what can legislation do?

Dr. SMITH—Exactly sir; this extract comes to that question exactly. Dr. Newman of Buffalo, the writer of this report says:

“We want a strong municipal law, which shall plainly and distinctly say in what manner our edifices shall be built, especially those which are to be situated under circumstances likely to develop disease, and to be inhabited by those whose pecuniary circumstances and personal habits are liable to induce conditions from which may arise sources of contamination; a law which will prescribe the number of inmates to a building and to a room; a law which will define and give to each man, woman, and child, a sufficiency of air and breathing space.

“To the objection that may be made, that this would be an encroachment upon individual rights, and would interfere with the interests of property holders, and subject them to expense and untoward hardships, I would reply, that society has assumed to itself this right in other matters; that it has assumed to itself the right of protecting itself against the dangers of conflagrations; that it defines the mode in which our buildings shall be built so as not to hazard the property of others; that it does this at the risk of an increased expenditure to the builder, and a diminution of his profit, nor pays heed to any cry of hardship which may be raised, as it legislates for the safety of the public at large; so, we contend, that the power which defines that our edifices shall be built fire-proof, is equally potential to declare and insist that they shall be built disease proof. Law now defines the number of passengers a vessel may carry upon the seas, and sacrifices the profits of the merchant to the safety and welfare of the passenger.”

This is my view exactly. That is the remedy I would propose. There are few prisons constructed now not in accordance with sanitary principles; and if our prisons are built with a view to health I see no reason why our private habitations should not be.

Mr. MATHER—Have you any other evils to speak of?

A. On what point sir?

Mr. MATHER—I ask if there are any other evils, and if so, what are they?

A. I think it would be a proper subject for legislation to see that houses should be built as is here proposed they should be. If that point be settled then I would suggest as to the way in which the public health being established, may be preserved. We will suppose a case where all is healthy with proper accommodations, with space sufficient for all healthful purposes. How shall this state of things be preserved? Is that it sir?

Mr. MATHER—Yes, that will cover the ground.

Dr. SMITH—In the first place, sir, man requires supervision; and I cannot see why we should not have proper officers to look as well to the sanitary condition of the citizens as to their morals and general conduct. It is the duty, it appears to me, of the Legislature to devise means for preserving the health of the citizens. It appears to me, that in the first place, there should be a medical police; in this report it is called a sanitary police. There should be a medical police, and it should be constituted in such a way as to be able not only to detect the causes of the generation of disease in their incipency, but to know where to find them and how to correct them. And it appears to me that none but those persons who are qualified by the study of medical science, and hygienic science, in particular, should be appointed to sanitary offices, for none others can do the work properly. I do not know how any others could set about to seek out the



causes of disease, giving to each its right weight and influence in producing disease, its relative power, and how the evil is to be corrected. I know not how any system of medical police should be carried out, or even devised, except by medical men acting as an advisory board. This is established in all our public hospitals, and why not in this great hospital, the city of New York, where the well and the sick are all mingled together? It should consist, it appears to me, of an efficient medical head with subordinates to whom could be appropriated certain duties so as to secure a thorough inspection at all times, and constant vigilance with a view to the correction of any evils that might spring up, and the attendance on any injury that might be sustained in any way, either to the health of the public or of individuals. If a man were lodged in a garret and was suffering from his position, it should be the duty of that officer and his subordinates to bring him out of it, *vi et armis*. And it seems to me that certain kinds of habitations should be examined. All cellar population should cease. And I think that mercantile places of business where there is nothing but gas light; and where persons spend their days and nights in gas light should not be considered as sanitary, for they have not the opportunity of enjoying the common salubrity of the air above ground. In regard to the cellar population I have not got any statistics.

Mr. MATHER—Dr. Griscom has given us some information on that point.

Dr. SMITH—In regard to two or three other points—of ventilation. The space required for each person for the purpose of lodging dormitories, should be carefully looked to, and the best means of ventilating them; and when that has been done, the space without, around buildings and habitations, should be larger, for the purpose of ventilation and sun-light; and indeed all places where human beings are.

With regard to water: There is nothing wanting in this city with regard to the purity of the water. The mode of its distribution I think is objectionable.

The sewerage is improving from year to year, but in regard to its affections I am not prepared to speak. All that is spoken of in this report. The great errors in the construction of sewers, Dr. Newman speaks of here. Ventilation and pure water, I suppose, are the great means of preserving health; without these no situation can be healthy.

Mr. ELY—You have no reason to believe that the food in the city of New York is worse than in other cities?

A. That is one of those things that I am not prepared to answer decidedly. The meat brought to market, the milk that is used, and the bread that is eaten, are said to be unhealthy; but I have no statistics on which to base any decided opinion in that respect. So far as I know there are none that show an injurious influence on the public health sufficient to appreciably increase its mortality. But in regard to another class of agents, and that is drinks, I am prepared to say anything that may be desired in the way of strength.

Q. You think they exert a great influence on the health of the inhabitants?

A. They exert a very pernicious influence, and we see that the evils arising from the use of intoxicating liquors are daily increasing. We see it in our hospitals; we have cases of *delirium tremens* brought to us, and we recognize it in the many diseases which are constantly under our observation.

Q. I would like the doctor to state whether he does not think the intoxicating drinks sold in this city are more poisonous than those in the cities of Europe?

A. That is one of those questions which is most interesting, but which I am not prepared to answer.



## TESTIMONY OF DR. ALEXANDER H. STEVENS.

Dr. Alexander H. Stevens said: There are a number of statistical facts of which I was possessed, in relation to this subject, that have passed out of my memory, and which I cannot refer to now. I look upon this movement, if rightly carried out, as capable of redounding to the credit of the party who is instrumental in bringing it about, as much as any measure that our city was interested in since the project of the Erie canal. They say he is a benefactor to the human race who makes two blades of grass grow where there was formerly but one ;” and I think he is a much greater benefactor who makes two children live where only one grows up now ; and that I think is within your capacity. I think the mortality, through the agency of an efficient medical organization might be made 25 per cent better in this city, and indeed throughout the State, for there are a large amount of unnecessary deaths occurring. When the railroads were built along the North river, there were a variety of little streams which were intercepted, or that have made pools of stagnant water, and all that bank of the river which previously was healthy has now become entirely the reverse. So it was with the canals. They carry disease along with them ; but that is perhaps unavoidable. Where railroads are built through the country they cross a slight valley and stop up the stream, and that is the cause of disease. This whole subject is so extensive, and one that not only regards the city but the State, that it appears to me the remedy lies only in the permanent organization of a State board of health. Indeed, the best informed among the medical men cannot attend to this whole matter. It is not their business. Their business is to cure diseases we have met with, and we have not time to enquire into other diseases. But you can legislate upon the subject. If every given locality would make investigations and collect valuable knowledge, you could educate men and perpetuate that knowledge. You want a permanent board of health to take cognizance of these matters ; and in my view, that board of health should consist of a medical man and a geologist, who should be a man capable of appreciating the features of a country, and of a chemist who can analyze the sources of disease. Now it rarely happens that a medical man possesses sufficient knowledge on these branches, and therefore he would not be qualified to discharge the whole of the duty himself. It is outside of the profession in my view, contrary to what has been suggested, that you are to get the officers. You want them under the direction of medical men, and outside of the profession you can find efficient persons to execute the course pointed out by the professional men.

In regard to bad ventilation. Formerly our houses were built vastly less tight than at present, and with open fire-places. Now our houses are shut up tight, our garments are more close, and if we have open grates, we have only 16 or 18 inches to let up the hot air, and that air is taken from the room. All above the outlet of the flues is boxed up. The great economy of these hot air flues is the economy of heated air ; they make you live on a great deal less air than before. All that is at the expense of fresh air ; and notwithstanding what Mr. Post says, I must say that I have not seen any rosy-cheeked children in houses where they are so much confined ; and I know they are much more liable to take cold when they go out.

In regard to the cellars and subterraneous dwellings, I think you should get a law passed stating that cellars are not fit for human domicils, and that every cellar should have a chimney-flue connecting with the top of the house. We have a great many causes of disease outside, but there are quite as many, or perhaps more, within our own doors, even with families living respectably, and among the higher classes of society. You have vegetables and soap-suds in the cellars, and they are poured upon your



ashes, and you have boxes of garbage put away in some dark corner in the cellar, and left festering there from month to month, and the consequence is that people take typhus fever. In the country the same thing prevails, and there is to-day as much disease contracted from the impurities about the houses, as from the general malarious condition of the atmosphere, except in very healthy localities. Those cellars have no proper means of ventilation, for if they had they would be healthy.

Mr. ELY—Do you think the sanitary condition of the city should have medical supervision?

A. Yes, sir, and a permanent medical supervision, and though the principals should be changed, the office should be there to perpetuate it; though a new head officer should be selected, his subordinates should remain.

Mr. MATHER—You do not think it is necessary that the subordinates should be medical men?

A. Some of them, sir. I think that the patients should be visited by medical men; but there is a great deal of work that might be done by others. I think they should all act under medical opinion; and one chief officer could not supervise everything.

Dr. SMITH—I would place as much executive power in the sanitary police as is given to the health officer. I think it would require more medical science to administer the sanitary affairs of a large city, than is required to administer the affairs of the health officer at Staten island.

Dr. STEVENS—I think where a number of persons inhabit a given area, there should be a maximum space for each one to live in.

Dr. GRISCOM—Don't you think that every sleeping room should be required to have a window communicating with the open air?

A. Either a window or a door.

Mr. SCHELL—Don't you suppose that the sanitary supervision of the city should be strictly under the charge of medical men, subordinate officers and all?

A. I think that medical men would require some other aid. If you get a good health board, the rest will follow. There are some questions which a medical man cannot decide without consulting a chemist or geologist.

Q. Should we not have a medical man over each of the twenty-two wards of the city?

A. There are questions which would come up that would require a skillful chemist or geologist to decide. You only want one in the central board.

Q. Dr. Stevens, would you not suggest that it would be prudent if the Legislature should require all those tenement houses to be under certain restrictions?

A. In France it is so arranged that when a person is going to build a house the board of health send an inspector to see that it is built in accordance with the principles of health and sanitary science. If a man is going to put up a mill, the board of health object to it if they believe it will injure the health of the neighborhood. But if a person succeeds in obtaining from the authorities a grant for a mill, a population of those who work in it will soon gather in the locality and their votes will not remove it. If a man puts up a disgusting building, the board of health has power to prevent its erection. I would make it the business of this general board of health of which I spoke, to prevent anything that will have a tendency to injure the health of the city; and I would have them stop manufactories where children in them were too much crowded together.

Mr. MATHER—There was an effort made to pass such a law, last winter.

Dr. STEVENS—We have men employed in making phosphoric matches, and then they are compelled to have their jaws taken out.

Mr. SCHELL—In regard to the hotels in this city is there anything that



can be done for the servants. Four-fifths of the servants in first class hotels sleep in over-crowded garrets ; what can be done in such a case ?

A. Well, I think they are a pretty healthy set of men. All the day they are not shut up in a close atmosphere. A very beautiful illustration of the value of perspiration is observed in the fact that if you cover a frog over with varnish, he will begin to pine, and finally will die suffocated. All of us know how comfortable an air bath is, when we get out of bed in the morning. It is important to state that we use many of those Marseilles quilts that are air tight ; they do not give you ventilation, while blankets will. You observe the same principle carried out when you wear a McIntosh coat. A ragged man is often better situated in his apparel for health than a rich man ; a rich man cannot afford to be so dressy as a poor man.

Dr. McNULTY—I can answer from a very large experience down town, that the servants in hotels are unhealthy. Take a certain number of employees in a hotel, and the same number of laborers from the canal, and you will find that those in the hotel are more unhealthy than the others. They very soon lose their appetite, and that I attribute to their confined sleeping apartments.

Dr. STEVENS—The question was asked with regard to the prevention of small pox, whether compulsory vaccination would eradicate the disease, and it was answered that the population of the city is so transient that it would be difficult to exterminate the disease. On emigrant vessels the physician ought to be compelled, during the voyage to this country, to vaccinate every person who has not got a good vaccine scar ; and if they do not show that, they should be detained at quarantine until they present satisfactory evidence that they are not liable to contract the disease.

Then, in regard to tenement houses, you might appoint a keeper. In these houses where there is such a regulation, the houses and inmates are in much better order. Possibly something might be done where there is no question about the ownership, to make the landlord responsible. In regard to servants I would remark that I see them as dispensary patients. The servants in hotels do too much work ; and consequently their apartments, at least, should be large to admit of much more air, so that they would thus be enabled to obtain more rest.

Dr. SMITH—I suppose that the situation of New York, apart from the malaria which pervades its neighborhood, has the advantage of being one of the healthiest positions in the world. I think what I have said to-day is sufficient to cover the whole ground, and to show that it *ought to be* healthy. The rivers on each side of it, and the atmosphere pure from the east and west, while naturally we have salubrious air, should we not be as healthy here as in any part of the continent ? And I have no doubt that if our sanitary regulations were executed by competent and untiring persons, we might be brought up to a great degree of healthfulness.

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WEDNESDAY, October 27, 1858.

#### TESTIMONY OF DR. D. MEREDETH REESE.

Dr. D. MEREDETH REESE prepared the following statement :

Gentlemen—It is my professional opinion, that “ *the health of the city of New York is at present, and has been for many years, inferior to that of any other city* ” on the globe. And this while our topography, latitude, temperature, climate, proximity to the ocean, purity of water as well as air, facility of sewerage, and convenience for recreation of our people in



the parks, upon our rivers, on either side, and in the adjacent and readily accessible localities in our immediate vicinity, are all in the highest degree salubrious, and ought and might easily be made to render New York the healthiest city in the world.

The "reasons and causes" are numerous, and may be best presented in brief by a summary, thus:

1st. Innumerable tenant houses, with one or more families in every room, often numbering two and even three hundred men, women and children; all of whom eat, sleep, and cook in their respective apartments, of some 12 to 15 feet square, including the garrets and cellars. In very many of these houses, covering the entire lots, access to the air or its free circulation is a physical impossibility; the morbid exhalations from so many bodies, to say nothing of the abounding filth and accumulating odors inevitable under such circumstances, render the atmosphere analogous to that of an uncleansed common sewer, which receives the offal, refuse, and excrement of a neighborhood. Add to this the adulterated and noxious quality of the food upon which the inmates subsist; the drugged and unhealthy drinks they consume; and the general absence of cleanliness which characterizes such families among our poorer population; and the sickness which abounds in such houses, and the deaths which crowd our bills of mortality from such families, may be regarded as the legitimate fruits of these flagrant violations of the laws of health and life.

2d. The true criterion and best index of atmospheric impurity, in any city or other locality, is manifested in young children, whose greater susceptibility to morbid causes, by reason of their greater delicacy of structure, renders them the earliest victims of atmospheric poisons. Hence the fearful aggregate of infant mortality in New York, which authentic statistics disclose, is at once the fruit and the proof of the contaminated air they breathe, in the wretched habitations of the poor, whose confined and ill-ventilated apartments render healthy respiration impossible. Vital air is a greater necessity to health and life, especially in the young, than food itself, and is a more fruitful source of nutrition. And when to the privation of pure air is superadded the inferior and even poisonous quality of the *milk* and other necessities of life, it becomes certain, by a physical necessity, that the vitality of infants and young children fails, and fatal disease becomes inevitable; indeed almost any form of disease becomes fatal in young subjects. The appalling mortality of children in New York is, in a vast majority of cases, due to the causes here named, of which the evidence will be found on file in the office of the city inspector.

3d. But there are other numerous prolific sources of disease, in the various manufactories, still carried on in the populous districts of our city, which diffuse foul, putrid, and noxious vapors through the air, and load the atmosphere with unhealthy and offensive odors, which are detrimental to the public health. All of these are nuisances, in the worst possible sense, and, with a capable and incorruptible city inspector, would be abated, even under the present law. But while a mere politician, without any, even the least, qualification of sanitary science, and who has no scientific character or medical reputation to sustain, can be placed at the head of the health department of this great city, having a population approaching three-quarters of a million of souls, it is idle to hope for any improvement in the early discovery or fearless removal of these and the like sources of disease and death, from which much of our mortality proceeds.

4th. The health department of this city imperatively needs and requires entire and radical changes, equivalent to reorganization. A *medical head* is the first and great necessity, which, if this were recognized in the law, would lead the appointing power to select for so important and responsible



place a physician of character, education and experience, irrespective of any other consideration than his capability and qualifications in sanitary science and medical police. Nor should any but such be intrusted with the subordinate relation of health wardens ; for to employ any other than an educated medical man in so vital and important duties would be regarded a farce, but for the political exigencies which prompt it.

5th. The present quarantine system has proved itself so utterly inefficient and mischievous, that an entire revolution is called for, by all classes of our citizens, and especially by our shipping and commercial men, who are the most severe sufferers, by the severe and worthless restrictions of an old and obsolete system, which is throughout a burlesque upon sanitary science, and worthy only of the dark ages of barbarism. The health officer, and often his deputy, are chosen from a class of doctors, so called, who, like the physician-in-chief of the marine Hospital, have never seen a case of yellow fever or cholera in their lives, and who, until they learn their profession in their new positions, cannot discriminate either disease from small pox, which is the only contagious fever against which any quarantine restrictions can avail. And yet these are the very cases of small pox which, in their latent state, are under the present system suffered to come up to the city, to which cause alone the perennial presence of small pox in our city is due, by which hundreds of our citizens are annually sacrificed. Indeed, but for the failure of quarantine to keep the small pox out of our ports, the profession could annihilate by vaccination, this loathsome and fatal malady from the city and the country. But meanwhile, the health officer, at an annual income greater than that of the President of the United States, is clamoring about the yellow fever and other diseases which he swears are not contagious, but only infectious—thus creating the panic annually, so disastrous to commerce, and ruinous to the pecuniary interests of the city.

6th. The committee of the senate have now the opportunity of exposing the imbecility and ignorance which characterize our present quarantine laws—more tyrannical and oppressive than any free country or city on the globe attempts to enforce ; and directly opposed to the teachings of experience and to all enlightened science, and hence are opposed and denounced by scientific men in all parts of christendom, as founded in superstition and imposture, and conniving at extortions and pecuniary speculations which are a reproach to civilization.

7th. The quarantine system needed, should provide against the possible introduction into our port of the *small pox*, or any other contagious fever, the sick of which may communicate it to the well. And as in such case the vessel and cargo participate in the contagion, these as well as all the persons and things on board, should, for the public safety be kept at the quarantine or lazaretto, until by enlightened measures and adequate time the dangers of contagion are annihilated. Next, it should impose no restraint on the *persons* of those who arrive in health from sickly ports, in the case of any non-contagious fever, as yellow fever, &c., is known to be, though equally known to be *infectious*. The infection does not inhere in the person, whether sick or well, but in their clothing and effects, in the holds and cabins of the vessels ; and hence, while the sick should be sent to the hospital, and thus removed from the infected vessel, the well should only be detained on shore at the quarantine for the washing of their clothing, &c., the only justifiable pretext for such detention. Meanwhile the vessel and cargo should be thoroughly disinfected, by artificial cold, if necessary, being superadded to the ordinary means, and no farther detention should be allowed.

8th. The fees and perquisites of the health officer should be abolished, as



corrupting and demoralizing to the last degree, and the position should no longer be held by the Executive as a political reward for a partizan, irrespective of qualification, or its receipts be regarded as the spoils of the party in power. Let an adequate salary be paid to the health officer and his deputies, and let him be required to pay over to the public treasury every dollar he exacts from the owners and masters of vessels he visits, and from every other source. The income to the State would then adequately sustain the expenses of an enlightened quarantine.

9th. The board of health in this city, as at present constituted, is an unwieldy body, altogether too large for efficiency, and composed, for the most part, of men who, however estimable they may be as public officers, are without the necessary qualification for controlling the questions relating to the public health. The office of resident physician might well be merged in that of city inspector; while that of health commissioner should be abolished, as it is a sinecure, and a mere political reward.

Less than this would be an insufficient answer to the queries of your committee; and whether it be politic or not it is the TRUTH, and ought to be told. "He that is careful of himself was not made for the public."

The office of the city inspector, he said, contains the certificates of the deaths that occur in the city, and the location in which they occur. By comparing this report, it will be seen that three-fourths of the whole of the deaths of the city for a week, are among infants and young children, and it will be found that four-fifths of those deaths occur in the tenement houses, that is to say, not more than one-fifth of them die in comfortable apartments. The city inspector has the documents to prove this statement.

The health of this city depends as much upon the external introduction of disease as upon its internal generation.

Dr. Reese made particular reference to the infant mortality in large cities. In reference to that subject he presented a report, which he wished to be regarded as part of his testimony. It is a "Report on Infant Mortality in large cities, the sources of its increase, and means for its diminution. By D. Meredith Reese, M. D., L. L. D., &c.; Extracted from the transactions of the American Medical Association: Philadelphia, 1857."

The report is as follows:

The terms of the question thus submitted to the undersigned, very clearly imply—

1st. That the mortality of infancy, especially in large cities, has reached an *extent* of magnitude which demands inquiry into its causes and remedies by the medical profession.

2d. That infant mortality in large cities is *increasing* to a degree which renders it important that the sources of such increase should be sought by diligent investigation.

3d. That the *means of diminishing* the extent of the mortality among infants and children of tender age, while their discovery and adoption would greatly subserve the interests of humanity, would at the same time redound to the honor and usefulness of our profession, and contribute to the public welfare.

Upon each of these topics, it will be the object of this paper to remark very briefly, by presenting observations of a practical character, derived from experience and observation, together with such inferences as may be legitimately deduced therefrom. The presentation of the literature of the subject will be foreign from the purpose of this paper, as this alone would extend beyond the limits we have prescribed to ourselves. For the same reason, we omit any extensive introduction of statistical and numerical tables, lest these should derogate from our design to render the effort sug-



gestive and practical, capable of elaboration and amplification hereafter by others.

*First.* By “infant mortality” we understand the *mortality of childhood*, or, in other words, that fearful item in our official bills of mortality and reports of interments, which records the appalling fact that nearly ONE-HALF of the *whole number of deaths*, especially in large cities, occur in infancy, and before the subjects have reached the *fifth anniversary of their birth*.

TABLE 23.

*Table of Mortality in the City of New York, for the fifty years between 1804 and 1853, inclusive. Classified according to age.*

Stillborn and premature births,.....	24,164
Of one year and under,.....	78,762
Between 1 and 2 years,.....	40,281
2 and 5 years,.....	32,896
5 and 10 years,.....	14,351
10 and 20 years,.....	14,820
20 and 30 years,.....	41,740
30 and 40 years,.....	41,351
40 and 50 years,.....	29,114
50 and 60 years,.....	17,948
60 and 70 years,.....	12,879
70 and 80 years,.....	8,278
80 and 90 years,.....	3,769
90 and 100 years,.....	813
Of 100 and upwards, .....	105
Ages unknown,.....	1,971
Total,.....	363,242

TABLE 24.

*Infant Mortality for the years 1854, 1855, and 1856.*

In 1854.	Stillborn and premature births, .....	2,050
	Under 1 year,.....	7,116
	Between 1 and 2 years,.....	3,697
	Between 2 and 5 years,.....	2,810
	Total under 5 years, .....	15,673
	Total above 5 years,.....	12,895
	Total mortality, .....	28,568
In 1855.	Stillborn and premature births, .....	1,938
	Under 1 year,.....	6,399
	Between 1 and 2 years,.....	3,144
	Between 2 and 5 years,.....	2,582
	Total under 5 years, .....	14,063
	Total above five years,.....	8,979
	Total mortality, .....	23,042



In 1856.	Stillborn and premature births, .....	1,943	
	Under 1 year, .....	6,050	
	Between 4 and 2 years, .....	2,937	
	Between 2 and 5 years, .....	2,443	
	Total under 5 years, .....	—	13,373
	Total above 5 years, .....		8,285
			<hr/>
	Total mortality, .....		21,658
			<hr/>

In the 3 years, 1854, '55, and '56—

Total under 5 years, .....	43,109
Total above 5 years, .....	30,159
	<hr/>
Total mortality, .....	73,268
	<hr/>

Total number of deaths reported for 1856, ..... 21,658  
 Of which there were children under 5 years, ..... 13,373

Viz : Under 1 year, ..... 7,993\*  
 From 1 to 2 years, ..... 2,937  
 From 2 to 5 years, ..... 2,443

Total, ..... 13,373

Under 5 years, 13,375—being nearly  $\frac{5}{8}$  of the total number of deaths.  
 2 years, 10,930—being over  $\frac{1}{2}$  “ “  
 1 year, 7,993—being nearly  $\frac{3}{8}$  “ “

CITY INSPECTOR'S DEPARTMENT, }  
 NEW YORK, April 28, 1857. }

In the city of New York, as will appear by the accompanying statistical table, the whole mortality of the last half century amounted to 363,242, (including the still-born,) while the number of deaths *under 5 years of age* are shown by the same table to have been 176,043, which is nearly 49 per cent of the entire mortality of the city, and this is for fifty consecutive years. As in New York, so in other large cities, the proportion of infant mortality will be found to vary inconsiderably, if at all, so that it may be safely estimated that one-half of the population enumerated in the census, die before the age of five years; and hence the annual infant mortality includes little short of a *moiety of the human race*, unless it can be shown to be greater in our large cities than through the country and through the world. But of this hereafter,

Of the fearful *increase* of infant mortality in New York, regarding this as a type of other cities, we have the testimony of the same statistical table. In the year 1853, the deaths under 5 years numbered 12,963, while in 1843 only 4,588 such deaths occurred, showing the appalling increase of 8,375 within 10 years, which is vastly beyond the proportional increase of the population of the city during the decennial period, as shown by the census. Moreover, this increased infant mortality in 1853, as compared with 1843, is in a ratio very far beyond that of the aggregate of deaths in persons of all ages, in each of these years respectively, found in the same table.

\* Includes stillborn, ..... 1,556  
 and premature births, ..... 387

Total, ..... 1,943

Leaving for disease and external causes under 1 year, 6,050—being nearly two-sevenths of the whole number.



The deaths under 5 years in 1853 were 12,963, while the deaths of all others in the city of every age numbered only 9,739; so that the *infant mortality* exceeded all the other interments for that year by 3,224! This single fact exhibits in a striking light the importance of the subject of infant mortality, in view of its frightful extent and its alarming increase within 10 years. In 1843, the infant mortality exceeded the half of the aggregate mortality of the city by only a few *hundreds*; but in 1853 the excess over one-half the entire number of interments of all ages in the city, reaches as many *thousands*.

These particular years have been selected only because the semi-centennial table from which we quote includes the 50 years ending in 1853, and because it was only in 1843 that the city inspector was by law empowered to record all the deaths occurring in the city, irrespective of the place of their interment, and hence from this latter date he vouches for the reliability of the table. The mortality for 1854, '55 and '56, is appended for comparison, thus bringing our data down to the present year. Other corroborative tables, as those of Drs. Emerson and Condie, of Philadelphia, Dr. Lee and others, may be found in the books, and are too familiar to the profession to be reproduced here. They all show the enormous extent of infant mortality, and its amazing increase, the latter being a fact peculiar to our American cities, for in the great cities of the old world the mortality of infancy has been annually diminishing for many years.

This single fact exhibits in a striking light the vast importance of our inquiry. Why should infant mortality in American cities be greater than even in Paris! 8 per cent above Glasgow, 10 per cent above Liverpool, and nearly 13 per cent greater than in London? Why should it be increasing here and diminishing there? And this too when statistics abundantly show the mean duration of human life to be greater by  $3\frac{1}{2}$  per cent in our American cities, taken collectively, than in the cities of Europe? Whether we shall be able to point out the reasons for this remarkable disparity or not, by demonstrating that there are other sources and causes existing and operating here than in transatlantic countries, the fact remains that infant mortality has attained gigantic proportions among us, and is increasing with amazing rapidity; and this too when the general salubrity of our climate, and the facilities for sustaining and preserving life with us, are superior to those possessed by any country on the globe.

Having thus succinctly shown the *extent* and the *increase* of infant mortality in the largest of our Atlantic cities, and hence inferred a similar state of facts elsewhere, it will now be in place to inquire after the causes of such extent, and to seek for the *sources* of such increase. We pause, however, to premise, for reasons which will be hereafter apparent, that we include among the infant mortality all those recorded interments marked as still-born and premature births, the extent of which, and especially their amazing increase, constitutes one of the most revolting, and yet one of the most important features of our inquiry, and one which cannot be contemplated without horror. Let it suffice for the present to say, that during the last fifty years this New York table reports no less than 24,164 among the still-born and premature birth interments. And while in 1843 only 760 of this class were recorded, in 1853 no less than 1,930 are reported—an *increase* of 1,170, which is nearly 140 per cent of increase within ten years!

It will be perceived that these "still-born and premature birth" interments number equal to *one-fifth* of the entire infant mortality of the last half century, and hence ought not to be overlooked in any estimate made upon this subject. Apart, however, from their numbers, they must be included for another and a weightier reason, since the causes of mortality among children of tender age are, in a multitude of cases, to be found only



by extending our inquiries to their *intra-uterine* life, and the physiological state of the parents, but especially the sanitary condition of the mothers, their hygienic and moral habits, and circumstances. Nothing can be more certain than that the viability of the infant after birth, and its tenacity of life, depend very greatly upon the condition, circumstances, habits, and health of the parents, particularly those of the mothers, during every period of pregnancy. And hence pathological and demoralizing agencies, operating upon parents in reproduction and during utero-gestation, are often the sources of "premature birth and still-born" cases, but not less the cause of early death in their offspring after birth, and resulting in a vast proportion of the infant mortality so sadly and universally deplored. These considerations may suffice to justify our plea for including the still-born interments among the victims of infant mortality.

In contemplating this subject, we shall find it difficult to believe that the inestimable jewel of life is given by the Creator to such myriads of our race, with the design that a large majority of those who receive this boon are destined, in the Divine plan, to perish during their foetal or infantile existence, and that he has left us without any remedy to avert so terrific a catastrophe. Indeed, from what we know of the wonderful viability, and mysterious tenacity of life which characterizes infantile existence, both *intra* and *extra-uterine* being, we should infer the contrary; and believe that the benevolent Father of all has other and wiser and better designs towards our race, purposes which are perverted or defeated by a violation of the laws of our being, whereby the children whom God has given us as a blessing, become a curse by our early bereavement, and they perish prematurely, the victims of our ignorance, our misfortunes, our follies, or our crimes. Let us then enter upon an examination of the causes of infant mortality, and inquire why it is, that more than half the children born in our large cities are numbered with the dead at their very entrance into life. Renouncing the idea of irrevocable fate as the source of this fatality, let us seek for its source in our own public and private disregard or trespass of the laws of health and life, both in relation to ourselves and our children.

First, then, let us look at the cases of "stillborn and premature birth," which constitute so large a proportion of infant mortality. The causes of these are well understood by the profession, when occurring from hereditary and constitutional vitiation of blood in either parent, from contingent morbid agents acting upon the body or mind of the mother, and from incidental or accidental events occurring during pregnancy and parturition. But it is equally well known to all medical men, that from all these causes combined, such cases are *rare* compared with the number of births under professional management; and moreover, that they bear *no proportion whatever* to the astonishing records of the interments from this cause. Let any man compare the stillborn cases with the numbers of living children born in any of our hospitals or asylums for lying-in women, and these mothers are often the most unfavorable cases of maternity, and he will discover how rare are the stillborn or premature cases. It is plain, therefore, that their extent and increase in various classes of society are due to other causes. Without entering into any unnecessary detail upon this delicate and ungracious topic, it may suffice to allude only to the ghastly crime of abortionism, which has become a murderous trade in many of our large cities, tolerated, connived at, and even protected by corrupt civil authorities, and often patronized by newspapers whose proprietors insert conspicuously the advertisements of these male and female vampires, for a share in the enormous profits of this inhuman traffic in blood and life. These murderers, for such they are, are well known to the police authorities; their names, resi-



dences, and even their guilty customers and victims are no secret to the authorities ; they have their boxes at the post-office, loaded down with their correspondence and fees ; take their seats at the opera ; promenade our fashionable thoroughfares, and drive their splendid equipages upon our avenues in proud magnificence, while the " blood of the slaughtered innocents " is crying against them for vengeance.

Fidelity to the truth constrains this allusion to a topic which else it were " a shame even to name ; " but the worst is yet untold. There are fathers who employ and pay these wretches, and, alas ! there are mothers who become their victims, and voluntarily sacrifice their unborn infants, and hazard their own lives in the criminal process. Would that it were only the profligate, or even the unfortunate of their sex, whose guilty fear or shame thus seeks to hide the evidence of illicit amours. But the proof is overwhelming, and everywhere known to the profession, that even the married, to postpone the cares of a family, the perils of parturition, the privations and duties of maternity, and sometimes in view of the pecuniary burdens they apprehend as intolerable, consent to the use of drugs, and even the employment of instrumental and other means, to arrest early pregnancy, and to produce premature delivery, persuading themselves into the vulgar fallacy that there is no life before quickening, and that early abortionism is therefore less than murder. That such means are often used unsuccessfully, and are thus brought to the knowledge of medical men in time to repair and prevent the mischief, is a proof of the fidelity of nature in preserving the viability of the infant even under adverse circumstances. But that such often succeed, always by jeopardizing, and sometimes by destroying their own lives, is notorious. And that very many " premature births and stillborn children " are the result of mischiefs inflicted upon mother or child or both, by awkward or unskilful attempts at abortionism, can neither be denied nor doubted. It is humiliating thus to record the wide-spread prevalence of an evil scarcely known to the generation of our fathers. The object of the institution of marriage, viz., the birth and nurture of offspring, the sacredness of the family relation, and all the sanctions of virtuous love in the conjugal and parental relation, seem to be ignored in these degenerate days, and need to be revived in the public creed and practice. It adds to the melancholy aspect of this subject when we record our conviction, that not merely the stillborn, but much of the mortality of early infancy, results from the injury inflicted upon mother and child by the unnatural and unsuccessful attempts made to prevent conception, and during pregnancy to procure abortion. The same effect is produced in other cases, without any criminal intent, by drugging or " doctoring " women in various ways, while pregnant, under the real or imaginary ailments to which they are subject, or to " prepare them for an easy confinement." All such prescribers are either knaves or fools, and should be shunned by such patients for their own safety. Pregnancy is not a disease *per se*, and in the case of a healthy mother, neither requires nor admits of medication. Nor can it be doubted that many children are destroyed both before and after birth by the practice of drugging the mother, which so reprehensibly prevails among various classes of the community.

By the table it will be apparent that the mortality of infants under one year old, greatly exceeds that occurring between one and five years of age ; while the mortality under two years is nearly four times that between two and five years. Moreover, the number of children who die under five years of age, is greater than the whole mortality between five and sixty years of age ! Hence the perils of life during the *five* years of infancy are greater



than during the *fifty-five* years subsequent to that age. That this horrible fatality is a necessary evil, we should be slow to admit.

The *first year* of infancy, as we have seen, exhibits the most appalling waste of life, being one-fifth of the aggregate mortality of our whole city population of all ages and from all causes. The dangers to life attendant upon early infancy, and especially during the first year, are well understood by the profession and the public; these arise from a variety of causes, viz:

1. Defective vitality at birth, hereditarily transmitted from one or both parents, whereby the infant is not viable, and perishes from inanition; nutrition and development being physically impossible. These are reported in the bills of interments as cases of marasmus, tabes mesenterica, consumption, &c.

2. Mismanagement of infancy, by parents, nurses, or doctors, in feeding and physicing the newly born; depriving them of the nutriment simultaneously flowing into the mother's breast, as nature's only and all sufficient supply for nutrition and development, and substituting therefor the thousand slops, teas, and drugs which officious grannies, of both genders, are wont to prepare and administer. It may safely be computed that a moiety of the mortality among infants of days, is the direct result of spooning into the stomachs of new-born children some of the worst simples and compounds which they will ever taste through life, in case they survive the infliction. Not merely molasses, or sugar and water, catnip tea, olive or castor oil, goose-grease, spoon victuals, and the like, but salt and water, soot tea, gin sling, and even *urine*, are incontinently forced into the infant's throat before it has known an hour of life. Thousands thus perish in early infancy, their deaths being ascribed variously to colic, cholera, diarrhœa, dysentery, or convulsions, though oftener produced by drugging for the relief of symptoms which the mother's earliest milk would have prevented or cured; life being sacrificed by soothing syrup, Godfrey's cordial, Jayne's carminative, or some other vile mixture of molasses and water, with opium and brandy. These sleeping draughts and anodyne nostrums are more deadly poisons to budding life than all the diseases of infantile existence; and to these a very large proportion of infant mortality is justly to be ascribed, for whole hecatombs of victims are thus poisoned out of life, in the very dawn of their being.

3. The ratio of infant mortality in large cities is conceded to be much greater than in country towns or rural districts, and for the reason that in the former so large a proportion of the births take place in the abodes of the indigent, which, if not in garrets or cellars, or shanties, are sadly deficient in the supply of light, pure air, free ventilation, cleanliness, clothing, fuel, and wholesome food, so necessary to the health, comfort, and safety of the mothers, not less than their offspring, whose vitality is henceforth to be derived from the maternal bosom in the milk, whose quality depends on the blood which circulates in her veins. Multitudes of infants born under these adverse circumstances of atmospheric contamination, perish in a few weeks or months for lack of pure air; and instead of marveling at the extent and increase of fatality among such, we might rather wonder that any survive.

4. How much of the infant mortality in large cities, and its alarming increase, is the legitimate result of quackery in some one of its varied forms, to which sick children are subjected, may be difficult even to conjecture. That "false theories in medicine have slain more of our race than war, pestilence, and famine combined," has been affirmed by high authority. It is sustained by historic evidence. Nor have these medical heresies, the offspring of ignorance, presumption, superstition and avarice ever been more rife, especially in large cities, than they have been of late



years, and still continue. Every phase of quackery is characterized by an overweening faith in drugs, and a delusive confidence in specifics, inspired by the brazen effrontery of the charlatans who "by this craft have their gains," and who employ themselves in encouraging the people to become, with the aid of their new system of drugging, "every one his own doctor." Multitudes fall into this snare, and by the purchase of a box of specifics, and a book of instructions, are assured that they are possessed of the remedies adapted to all the diseases to which "our flesh is heir." The popular mind is indoctrinated by these quacks into the belief, that in all ordinary diseases they may confide in these specifics, especially for *infantile diseases*. And that thousands are annually added to our infant mortality by diseases entirely within the control of the healing art, the early periods of curability being lost, in these experiments of ignorance by credulous parents and pretended physicians, is notorious in every city. So true it is in this connection, that "for want of timely aid, millions have died of medicable wounds;" nor is it less true, that by injudicious and misguided interference with drugs, by the ignorance of mothers, nurses and doctors, our infant mortality is immeasurably augmented.

It remains, however, now to allude to the very considerable proportion of early mortality among the depraved and vicious families who abound in large cities, which results from the transmission of the hereditary poisons of either scrofulous, scorbutic, or syphilitic disease, from one or both parents to their offspring, whereby their young blood is fatally tainted with constitutional maladies, extending to the second, and even the third generation. The "parents have eaten sour grapes, and the children's teeth are set on age." The multitudes of children thus perish early from diseases which descend from their parents, constituting a fatal inheritance of poisoned blood, is a fact as demonstrable as any other in human pathology. Hence it cannot be overlooked, in any inquiry after the sources of the extent and increase of infant mortality in large cities.

The extent, increase, and sources of infant mortality having been thus briefly considered, our next inquiry is into the means of its diminution, a task infinitely more difficult, and still more important. Is there any remedy for this deplorable and desolating scourge in our large cities? To this inquiry we now address ourselves, and in view of the sources of this waste of human life already enumerated, it must be obvious that a radical revolution in the public creed and practice, a thorough reform in the opinions, habits, and conditions of the masses of our city population, are indispensable to any diminution, either of the extent or increase of our infant mortality.

For obvious reasons, we begin our remedial means by alluding to the physical health and moral habits of the parents, which must be regarded as the primary root of the evil in a vast proportion of the cases. To increase and multiply the race was the original design of the Creator in ordaining marriage; and in negotiating every such alliance, both of the sexes should be impressed with the possibility and even probability of offspring. The physical health of both parties in every marriage contract should hence be regarded by each in anticipation of this result, and as equally important with the moral habits, on this account. And as marriage is a civil contract, the fruits of which vastly concern the public welfare, bearing as they do upon the present and the future generation, it is the duty of the State, in every civilized and christian country, to surround marriage with all the sanctions of law, and to protect the unborn fruits of such alliances from premature destruction by statutory enactments. These



should be such as an enlightened science and philanthropy suggest, and should be encouraged and enforced by the united power of religion and law.

1. No marriage should be permitted between parties, until the physical health of both has been subjected to professional scrutiny. And such alliances should be prohibited by law, to those of either sex, who are the subjects of those diseases which are known to be hereditary or transmissible to offspring, or such as are fatal to infantile existence. Celibacy should be required by statute of all consumptive, scrofulous, scorbutic, gouty, insane, intemperate, and especially syphilitic individuals of either sex, and this, for grave reasons of state, which concern the public weal. Nor will any course, short of such legal prohibition of marriage, adequately correct the evil of that large portion of infant mortality thus engendered.

2. To remove the temptations to the unnatural crime of abortionism, and prevent the abandonment and cruel murder of unborn and newly-born infants, among the vicious and depraved portion of our population, for purposes of concealment, as in the case of the illegitimate offspring of shame, foundling hospitals should be provided by the State, in all our large cities, for the reception of infants, and the concealment of the shame of unhallowed mothers, and the protection and preservation of the infant innocents, who are doomed to abandonment by the guilty authors of their being. These charities, wisely conducted, would diminish the stillborn and premature birth interments, in all our large cities, by a moiety at least; while they would almost annihilate the plea of necessity, urged in behalf of the horrible trade of abortionism, and thus lessen the number of its victims. Lying-in asylums, for expectant mothers, irrespective of character, whether married or unmarried, in which such might conceal their shame, and then "go and sin no more," are equally called for, to prevent the double suicide, so often resorted to, by such; while diminishing the extent and increase of infant mortality, the foundling hospitals being made open to them all.

3. The "poor we always have with us," by a sacred legacy from the common Father of us all, and hence, the duty and responsibility of caring for such is recognized in every christian community. But we have seen that among the suffering poor in our large cities, a fearful ratio of our infant mortality is found; and chiefly among the thousands of families, unreached by any of our public charities. The habitations of the poorer classes of our population, are for the most part in narrow, contracted alleys, filthy courts, or underground cellars; or, at best, in what are called tenant-houses, in the miserable apartments of which, thousands of families, each cook, eat and sleep in a single room, without the light, ventilation or cleanliness essential to the life of either parents or children. Under such adverse circumstances, often destitute of wholesome food, comfortable clothing, or necessary fuel, the children of such families sicken, pine away and die, prematurely, to an extent wholly unappreciated by the public, and unrelieved by the philanthropy of either the church or the State. Nor will this increasing source of our infant mortality be arrested, until the civil authorities shall, by public law, require the erection of dwellings for the poor, in accordance with the laws of health and life; and until, in all our cities, there shall be a sanitary medical police, whose duty it shall be to enforce such laws. No medical treatment can, by possibility, arrest diseases, or diminish their fatality, while the victims are found in the squalid and filthy abodes of the indigent, from which pure air, and often the light of heaven, are excluded, as among the wretched multitudes of our "cellar population," who furnish annually so large a share of our infant mortality.

4. The erection and endowment of hospitals for sick children are an im-



perative want in all our large cities, demanded alike by philanthropy and the public welfare, for the children of the poor, who thus only can be removed from the fatal atmosphere of their homes, by which their diseases are engendered, and within which their recovery is impossible. And as each of such habitations of the poor becomes, for lack of air, ventilation, and cleanliness, a centre of disease among its inmates, so, also, is it a nucleus, whence its atmospheric poison radiates through the neighborhood, infecting by a physical necessity, the whole vicinity. It is thus that endemics become epidemics, and a filthy tenant-house is the source of pestilence, infecting the section in which it is located, and often sweeping over a wide space, or including a city in its ravages. Hence, if the public authorities be indifferent to the claims of humanity, let them be moved by their fears; and let children's hospitals be founded, for the reception of the squalid offspring of the indigent, as a measure demanded by considerations of the public economy and public safety.

5. Infant mortality, in large cities, in a great multitude of examples, which no man can number, is caused by the impure and adulterated milk, and other unwholesome articles of food, which are among the necessities of life. Our profession has ever and anon sought to arouse public attention to this important subject, but in vain. Distilleries in or near large cities would be an intolerable nuisance and curse, apart from the mischiefs of their manufacture of alcoholic drinks, in view of the single fact that, wherever they exist, their slops will furnish the cheapest food for cows, the milk from which is more pernicious and fatal to infant health and life than alcohol itself to adults; poisoning the very fountains of life. So long as distilleries are tolerated in cities, cow stables will be their appendages, and the milk, fraught with sickness and death, will still perpetuate mortality, especially among the children of the poor. All the artificial adulterations of milk, as by water or chalk, &c., are harmless,—nay, laudable, compared with the poisonous supply obtained from cows fed on distillery slops, for to this poison chemistry itself affords no antidote, since it defies all analysis or synthesis,—a poison *sui generis*, utterly destructive both of health and life.

The evils we have deprecated from the bad quality of the milk used for the chief sustenance of infants are greatly enhanced, by the refusal or inability of so many mothers, among the rich as well as the poor, to nurse their children in conformity to nature's laws. Apart from the moral reasons which have been urged for this wise provision, that every healthy mother should furnish from her own bosom the sole nutriment for her offspring, there are equally forcible reasons of a physical character. All history and all experience prove that the attempt to rear infants by hand, even when the most urgent necessity may demand it, is always hazardous, and generally fatal, and this even before dentition has commenced. And those mothers who, at the dictate of fashion or ease, withhold themselves from the office and duty of suckling their own children, while their own breasts yield nutriment, and their health is adequate to the task, inflict upon themselves very great injury, while contributing to swell the aggregate of infant mortality. And, if such be the fact, whatever be the substitute for their own milk, and however satisfactory be the qualifications of the wet nurse provided; how immeasurably is this evil increased, in view of the adulterated or poisonous milk with which so many mothers supply their offspring, at the tender period when nutrition and development imperatively require the supply which the maternal bosom can alone afford. The feebleness and atrophy, so often fatal to infants, are too frequently the result of the privation, and nothing but dire necessity should ever remove any child



for nutriment, to any other fountain than that which nature opens for its supply, simultaneously with its birth.

Finally, let it not be supposed that the extent and increase of infant mortality we deplore is exclusively among the children of the poor. The contrary must be familiar to us all, and statistics could readily be cited which would render it apparent that in the better circumstances, and even among the wealthier classes of our cities, the instances are rare in which the most favored families succeed in preserving a moiety of their children through the perils of infancy. How much of the mortality in such is to be ascribed to the luxuriant and effeminate modes of life into which mothers, or those about to become mothers, are betrayed by the fashionable follies of the times, it might be difficult to compute, and as difficult to ever-estimate. And that much, very much, of serious and even fatal infantile disease is the direct result of the indiscretions of nursing mothers whereby the quality and quantity of their milk are deteriorated, and the health of their children overthrown, professional testimony might be cited in abundance. Errors in diet, late hours, crowded assemblies, the excitements of the opera, the theatre or the ball-room, the transitions from high to low temperature, the exposures to night air, especially with insufficient clothing, such as exacting customs and fashion demand, are all incompatible with the duties of maternity, especially during pregnancy and lactation. The privation of all these by young mothers was voluntarily submitted to in the generation of our parents, and hence more children were reared to bless their households, and the pleasing spectacle of a "houseful of children" was not then so rare as it confessedly is now. Half a score of sons and daughters in a single family, all raised to adult life, and often surviving their parents, was so frequent an occurrence that the loss of children by healthy parents was the exception and not the rule. That it is otherwise now does not admit of question, and for some of the reasons we have suggested.

It now only remains, in view of the extent and increase of infant mortality in large cities which we have shown to exist, that our profession and the public should be fully impressed with the facts, which observation and experience will fully corroborate, that such mortality need not and ought not any longer to be perpetuated. And if, as we respectfully submit, the sources and causes whence the appalling fatality in infancy and childhood have been demonstrated to flow, be such as are removable by the instrumentality of public and private hygiene, and the general introduction of sanitary reforms into the popular creed and practice, then we may legitimately urge the means and measures suggested for its diminution as eminently worthy of consideration and regard. When we of the medical profession shall have fully enlightened the public mind upon the importance of the subject, and set forth the value of prevention by removing its causes, and the means adequate to the diminution of the evil, then, and not till then shall we have done our whole duty in relation to the infant mortality, now so revolting and so frightfully increasing, in our large cities. The public press should be enlisted with its almost omnipotent voice, and the pulpit itself should put forth its energies in behalf of sanitary reform. The laws of health and life are of equal divine authority, and their wilful violation as sinful and as certain of retribution, as are the laws of the Mosaic code or the golden rule itself. In the behalf of the myriads of "infants not a span long," and who are perishing in our midst before they "know their right hands from their left," and whose young life is wasted for lack of systematic and united efforts to avert this sad catastrophe, we plead for inquiry, exertion, and public reform, in the hope of wiping out this foul blot from the escutcheon of our own country and the world.



## TESTIMONY OF DR. JOHN WATSON.

Dr. JOHN WATSON testified as follows :

“ When we undertake to talk of the comparative healthiness of cities, it is a very indefinite question. Some cities are healthy in some respects, and unhealthy in others. The unhealthiness of some cities arises from their locality, and in others from the occupation of the people. When you put the broad question, Is New York a healthier city than London or Paris? the only way to solve that question is by looking at the mortuary returns of each city. I believe the mortuary returns are larger in New York than in either of those cities, but I am not able to say that our city is unhealthy in proportion to that difference, and for this reason : we do not know upon what ground those mortuary tables are always made. They are not all made out on the same plan. A large class of diseases, for example, may all be reckoned in one, and may not be so reckoned in another table. Take for example the still-born children. In some statistics I believe they are not reckoned at all, while in our city they are ; and that single item adds very much to the mortality. Therefore you see unless these mortuary tables are made out according to the same formulas, you cannot tell the result correctly. Judging from what I know of the climate of London and of Paris, and the habits of the people of each place, I should say that New York ought to be the healthiest city of the three ; but whether it is so or not I cannot say. There are some diseases that prevail here that do not in those climates. For example : In the summer season we have a very prolific source of disease that was alluded to in the remarks made by Dr. Reese, namely, the diseases of children. Now in European cities they have not that class of diseases called “ summer complaints.” It is an American disease, and consequent on our warm climate and sudden changes. The Europeans have little or none of that, and these complaints add more to our summer mortality than anything else. I believe, as was stated by Dr. Reese, half of the mortality in the summer time consists of children under two years old. That item alone is a very important one. In other respects, consumption for example. I believe that a great many more people die of consumption in Paris and London than in New York. I believe the statistics for the whole of England and France show a greater mortality from that disease than those of the western states. Some years ago I had occasion to look over the tables on the subject, and I found that among our American population the mortality was not near as great from that disease as in the European population, showing that it is the character of the constitution that people bring to this city, and not the climate, that engenders consumption. I do not want to speak in detail, but there are other diseases that ought to be taken into account in speaking of the comparative healthiness of New York. There are some other diseases that I might go over in the same way. Scrofula, for instance, is a very rare disease in this country in its worst forms, but in Europe it is very rife; it fills the wards of a great number of hospitals, and is comparatively rare here ; hence a great many lives are saved here from that cause. We might criticise each disease, and it would be a much more satisfactory way of getting at the matter than by stating it in a general proposition. There are some things in which this city is much more unhealthy than other cities, and there are others in which it is not. A number of the great cities of Europe lose a great many from fevers, while we, comparatively few. The typhus fever is the scourge of Paris ; almost everybody that goes there takes it, and among the resident population it is looked upon as a matter of course if a person comes from the provinces to stay in the city he must have typhoid fever. That disease takes off a great many there, while in our city it is



but little known. The typhus fever of Ireland and that of Great Britain are of a worse nature, and sweep off a much larger part of the population than any of our fevers. With regard to diarrhœa and dysentery, we have good wholesome water here, while in many of the cities in Europe they have not. London is very badly supplied in that respect, and almost every foreigner is seized with diarrhœa when he goes to Paris in consequence of the bad water.

Question by the Chairman—We wish to ascertain in what our sanitary department is deficient and in what our mortality is greater than it should be in comparison with other cities, everything else corresponding. We wish to know whether the defect is in our internal arrangements.

A. My particular occupation and walk of life has somewhat excluded me from a personal knowledge of our political arrangements. My impression is that the sanitary system of this city is excessively defective. I believe it wants a thorough reformation and remodeling, as far as I can judge.

Q. You think that would induce a less mortality?

A. I do sir. I think a thorough supervision of our city by medical men, well trained in their profession, who knew how to point out nuisances and suggest the remedies to abate them, would save hundreds of lives every year; I have no doubt of it at all.

Q. Do you know whether in London or in Paris, still-births are excluded from mortality tables?

A. I do not know; but I think that I saw something on record, stating that there was a defect in that respect. This information can be readily obtained by the committee by addressing the authorities of London; they have all their returns published and kept for distribution. Their sanitary reports are world-wide in their reputation, and your committee ought to have access to them. The English system is pretty thorough. Farr's table would give you all the information on that subject that you want.

With regard to sanitary organizations, too; I picked up a little work that may not be familiar to the committee, and perhaps would be worth their perusal before making out their report. It is an essay on State Medicine, by Rumsey, who was consulted by the English government when they were preparing their system. He thoroughly revised the whole and attempted to re-organize it, and this book is the result of his labors. If, therefore, you are to provide any system of laws and regulations for us, I would recommend you to look at this book. The comparison of all our statistics with some of our own cities, might very well be taken; and the statistics of Massachusetts in regard to health returns, are very complete. They have been prepared by Dr. Jarvis, a gentleman I know very well—a physician who makes the collection of that sort of materials his life's business. Jarvis' Massachusetts reports would also give you correct information.

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#### TESTIMONY OF DR. RICHARD S. KISSAM.

Dr. RICHARD S. KISSAM testified as follows:

Q. What are your views with reference to the health of this city?

A. Judging from the statistics in comparison with London and Paris, and Philadelphia, our mortality is much larger; it is larger by quite one-third in proportion to Philadelphia.

Q. Do you think that is the result of the climate or any peculiarity of our location?

A. I think it is not, sir; I think the location of New York is one of the best in the world, as has been well stated by Dr. Reese. In regard to



rivers, Croton water, and geological formation, it is calculated to be one of the healthiest cities in the world.

Q. Does a great portion of this excessive mortality arise from causes within ourselves?

A. Yes, sir; and in order to prove that, I will state one fact. It has long been dwelling upon my mind that there must be some reason independent of the location, and therefore I have examined the tables of mortality of New York—the different wards, according to the city inspector's report of 1856. I have taken the two opposite wards, the most healthful and the least healthful. In the sixth ward, where there were 25,500 inhabitants in 1856, there were 1,089 deaths, having 1,400 dwellings. In the fifteenth ward the population was 24,046, and the deaths were 436—with 2,245 dwellings. Now these proportions have perfectly astonished myself even in looking into them. The proportions of deaths in the fifteenth ward are one in fifty-five, and in the sixth ward, one in twenty-three. If you take the fifteenth ward, there is one in fifty-five, which would compare favorably with the very best country population of the rural districts of England; and the mortality is about the same in Massachusetts and the country districts. I state these things only to endeavor to enforce the fact that New York in its location is capable of being, and is in certain portions, one of the healthiest cities of the globe.

Q. From what cause does this excessive mortality arise?

A. Probably from the peculiar character of the inhabitants in certain districts and from the sparseness of dwellings. In the first place there are 2,245 dwellings in the best, and 1,143 in the worst districts, and those in the worst districts probably are not more than half the size of those in the best district, and the consequence is, the crowded state of the inhabitants.

Q. What would you suggest in order to reduce the mortality?

A. I would have you reduce the evils of poverty, and it is not to be done in one or two years. The poor class must have good dwellings to live in and they must have medical missionaries to teach them how to live. They are taught upon almost every other subject than about how to live. They do not know how to cook their food; they do not know that they are poisoned when four or five of them sleep together in a room, without ventilation. If they are to receive proper instruction it must come from competent persons. No man would undertake to defend his own suit of law, because he is incompetent; and no man should undertake to teach men and women how to protect their health unless they understand the laws of health. I think that everything appertaining to the public health should be under the care of medical men. There are many causes operating to produce disease, which could not be seen by a non-professional man, and many of those things would escape the eye of a person who was not an expert, or whose judgment was not capable of determining the matter. The difference between New York and Philadelphia is this: almost every person in Philadelphia has a tenement by themselves; they are well provided for and comfortable. The city of course has a larger number of houses in proportion than our own. It is very seldom that there is more than one family in a house; but here, as has been stated, there are 20 or 30 families in one house.

Q. Then you regard ventilation as a great principle connected with the preservation of health?

A. Most assuredly, even in higher walks than among the poor. Our academy of medicine will sit night after night being poisoned, so that those who are sensitive on this point invariably have a headache next day. The historical rooms, the new building, is very badly ventilated. The subject of ventilation is one that seems to escape the attention of builders as well as of officers.



## TESTIMONY OF PROF. HORACE GREEN.

Prof. HORACE GREEN testified thus :

Q. What are your views as to the comparative healthiness of our city ?

A. I do not know that I can give you any definite information on this subject. It is the universal opinion of medical men that our city is an unhealthy city, when it should not be so. I would say in answer to your first question : we are subject to three forms of diseases here,—contagious diseases, endemics, and epidemics. We all know how contagious diseases should be treated. Endemics arise from local causes, and in my opinion those local causes exist, to a very great extent, unusually so ; and I believe these causes can be removed. Epidemic diseases are produced not only by local causes, but by an epidemic atmosphere. If we have these local causes removed, however, and the sanitary conditions with regard to air, food, and living recognized, although epidemic influences may come here, they will do no hurt, comparatively speaking. Therefore one great difficulty arises from these local causes. Now what are they ? Want of good air, want of good food, and the filthy condition of our streets. We know that if a person is subject to these three exciting causes—bad air, bad food, and bad living, where the surrounding matters are deleterious, he will certainly be sick sooner or later ; but if these causes were removed, he would more than probable regain his health. These are the three exciting causes in our city, all of which might be removed. We have the best air of almost any other city in the world, being situated between two rivers, and the breezes are constantly removing the air that would otherwise stagnate—a favorable condition which does not exist in other cities. We have ground enough for good tenements, and property sufficient, that is expended in a way in which it ought not to be used, to make all the poor comfortable, with regard to their habitations. We have all the advantages to make this city the most healthy city in the world.

Q. What would you suggest to reduce our mortality tables ?

A. The course that they have taken in those cities where they have improved their condition. London and Paris have done considerable, but they could do much more. They have done very much more than we have ever done. Take the town of Nottingham, in England, for example. When I was collecting my statistics with regard to the Quarantine question, I visited that city. Nottingham contained then one hundred thousand inhabitants, and until 1847 or 1848 they had really no sanitary regulations. When I was there it was in an unhealthy condition ; it was very much like New York. They had a great number of streets and crowded habitations, and were constantly having endemics. When they were visited with the cholera, the inhabitants died off like rotten sheep. It was after this—I think the year 1847,—that they established a medical sanitary commission. They went to work and removed those very causes to which I refer. They had the streets cleaned, sewerage established, and medical missionaries appointed or medical instruction given to the inhabitants, with regard to living, and the mortality was reduced at once to a very large extent. The next year the cholera came and spread all over England, and I think it was reduced seventy-five per cent in Nottingham. Now it is precisely so in our city. If we have the same means taken that were taken in regard to Nottingham, I am perfectly confident that we shall have the same beneficial result.



## TESTIMONY OF DR. ELISHA HARRIS.

Dr. ELISHA HARRIS gave the following testimony:—Having made no special preparation to meet your honorable committee, you will please to receive such testimony as I may be able to give, just as the various questions and facts relating to the sanitary interests of the city are presented to my mind. I am disposed to take very much the same view that Dr. Watson has taken upon the subject of the health and comparative mortality of New York as expressed in that learned gentleman's examination this afternoon. When we compare the sanitary condition of our city with that of other cities, we should take into consideration the peculiar conditions that characterize this city in comparison with the conditions that characterize any other cities, with which such comparisons are instituted; the corresponding conditions in other cities which affect the state of the public health, the rate of mortality, &c. First, I would like to state an opinion which I believe to be founded upon facts that are admitted and well understood by the older citizens of New York, viz: that this city possesses incomparable natural advantages over most other commercial cities either in this country or in Europe, in regard to *the essential conditions of natural salubrity*.

There probably is no other maritime city, and but very few inland cities, that can compare with New York in respect to the conditions that favor continued natural salubrity. Boston, for example, does not enjoy our mild and equable climate, and our great preponderance of sunny days. London is almost continually shrouded in a dense fog of smoke and vapor, and that entire city is nearly destitute of all the essential *natural* conditions that favor civic salubrity. Good water can scarcely be obtained there, and that only in a meagre supply; effectual drainage and sewerage are nearly impossible, and the Thames itself is a vast uncovered sewer. Again, the city of Paris, which, like London, boasts of an average mortality more than twenty-five per cent lower than that of New York, is not only an inland but an almost "land-locked" city, situated in a geographical basin, with a single stream of moderate size running through the city, and the natural ventilation of the entire area of the basin necessarily very bad. Besides, or rather perhaps, in consequence of these natural disadvantages, that city is afflicted with a persistent and very fatal form of endemic typhoid disease. But, as before remarked, the rate of mortality in Paris and in London is far below that in New York, in each of those cities the rate at present being about one death in every forty persons, per annum; while Berlin and some other great continental cities have a still lower rate of mortality. I wish here to remark, that in all large cities which exhibit such an improved condition of the public health, that improvement has been in all cases coincident with and directly induced by those municipal or State sanitary reforms which a previous high rate of mortality and alarming civic insalubrity had called forth.

The percentage of mortality in the city of London, as exhibited in the very accurate mortality registry of that city, in various decades in which no pestilential epidemics prevailed, during the last and the previous century, varied from *five to seven per cent, exclusive of all still births*. But mainly, I venture to say solely, by the agency of scientific sanitary surveillance over the causes of disease and death, the percentage of mortality is now kept *below three per cent*.

Were it desirable, gentlemen, I could lay before you similar and more recent and definite statistics which would go directly to demonstrate the great utility of municipal sanitary reform, based upon scientific principles and specially skilled governmental control of the causes of disease.



First, I would mention the mode of constructing houses and tenements ; the crowding of the population in particular localities, and the peculiar neglect of cleanliness in those localities that are most crowded. Such causes of insalubrity have come under the direction of municipal and state governments in some other countries, to a greater extent than in our own ; and, if I mistake not, that accounts for the lower percentage of mortality among certain classes of inhabitants in some other cities, than in our own. I would particularly refer you to the statistics of sickness and mortality in London, Nottingham, Liverpool, and Berlin, which I presume may be found in Dr. Griscom's testimony before you.

In answer to the first question proposed by your committee, I would state unhesitatingly, that without instituting an exact per cent estimate of average life and mortality, or attempting a nice balance between the various conditions that affect life and health in our city and in the different cities of our own country, and the cities of the old world ; weighing all those conditions with as much justness and correctness as possible, and properly estimating their influence upon health and the rate of mortality, I should consider that the city of New York presented a far higher rate of mortality than any other city in the civilized world. And yet, the rate of mortality in this city is not absolutely so high as in some other cities in our country. New Orleans has had a vastly higher rate of mortality in certain years ; but the causes are obvious, and there are some rapidly growing cities of the west that occasionally have given a very high rate of mortality. The same is true of towns and localities subject to some special malaria. But when we compare the mortality of New York with the mortality of Boston, we discover that the balance is greatly in favor of Boston. And in Boston the same system of crowding exists that prevails in New York ; they have no greater advantages in respect to drainage and in natural ventilation, or in respect to local or endemial sources of disease. I believe I may properly make this statement, from a personal knowledge of the topography of that city, and from an intimate knowledge of all the streets of our own city, and yet in Boston the rate of mortality is some 25 per cent. less than in New York.

If we compare the sanitary condition of New York with that of Philadelphia, we find that New York has the advantage of Philadelphia in regard to all local or endemic sources of disease, taking the whole city together. New York is washed on either side by tidal currents, which move with great rapidity, and in channels of great depth. The natural drainage of the city is remarkably perfect. With regard to Philadelphia, those favoring conditions are not as happily supplied by nature. Again, the city of Philadelphia is not in close proximity to the sea, and part of the city is located in a district noted for its malaria.

When we compare the city of New York with the city of Providence, we find that Providence has vastly the advantage of New York in regard to the health of its inhabitants, while it possesses no other natural topographical or physical advantages than those which arise from a more sparsely settled population, and from the residences of its inhabitants in separate or individual dwellings. That is an advantage which all the smaller cities enjoy, and which the city of Philadelphia also possesses. But the rate of mortality in the city of Providence is very nearly 100 per cent less than the average rate of mortality in New York. Many of the cities of Great Britain present a population living under circumstances very similar to those which exist in the city of New York, and in none of the large cities of Great Britain is there as high a rate of mortality as there is in this city. The conclusion must be, therefore, that the mortuary records in the city of New York present results that sadly belie the reputation of Manhattan island



for natural salubrity, and cause this highly favored city to compare unfavorably with most other large cities in respect to public health.

It would be difficult to state just what the average rate of mortality would be in New York, were those causes of mortality which are easily removable, actually abated or withdrawn; but it is safe to conclude from facts that are known respecting the improvement of the public health in cities where such sanitary reforms have been effected, that at least 25 or 30 per cent of the actual mortality of the city, from year to year may, and should be prevented, *because it easily can be prevented*. And were such sanitary improvements effected as we now refer to, in the course of a few years many of the social and moral causes that affect the health of certain large classes of the population, would be so far improved that the mortality would be still further diminished, probably to the extent of securing a total reduction of the rate of mortality full 40 per cent below the present rate. That would give us a rate of mortality of about the same average ratio as that of the whole of England, which is a fraction over two per cent of the whole population, or one in 48 of the population dying annually.

I would like to refer to the agencies affecting human health and mortality, and that I may the more definitely refer to such causes in the testimony which your committee may demand from me, I will consider those which are *external* in one class, and those which are strictly *personal* in another. The external causes may be included under the head of air, light, the supply of water, and the topographical or geographical distribution and location of the population.

Under the *first*, namely, air, we have temperature, humidity, and the purity of the atmosphere continually influencing the health of the population; and in respect to the natural conditions of the atmosphere, we have the winds and currents of air, which, of course include natural ventilation, or the natural supply of air to individuals and to habitations. The purity of the atmosphere is affected by drainage; by exhalations from the earth; by emanations from manufactories, and from places of storage, &c.

As regards the supply of light, it is so absolutely essential to human health, that it should come under the cognizance and control of those sanitary officers who direct the hygienic interests of cities; the supply of light to dwellings, to workshops, and to places of public resort. It is the supply of sunlight to which I particularly refer. In the city of New York a vast proportion of the population is deprived of sunlight, not only in workshops, in ware-houses, in counting-rooms, and in basements, but in the modern tenement houses, the hotels, the school rooms, the churches, and the private dwellings. So important is light to human health, that it should be made a legal offence for any party to deprive a neighboring dwelling of light. Dr. KANE refers to the effect of light upon health, in language that should be read and remembered by every person. The effect of the protracted absence of sunlight is depicted by him most vividly, and those effects certainly were most unmistakeable in the history of his residence in the Arctic regions.

The late Sir John Wylie, formerly physician to the Czar of Russia, mentions the interesting fact that in certain barracks in St. Petersburg, the difference in the mortality in the apartments of the barrack supplied by sunlight and apartments which were shut off from the sun, except by a moderate amount of diffused, reflected light, was 100 per cent; that is, that the mortality in the darker side of the barrack, that in which direct sunlight never entered, was 100 per cent greater than in that where the sunlight shone into the windows and doors of the apartments. Similar facts may be observed in the city of New York; with less definiteness perhaps, as regards statistics, than in a military establishment, but it is not



the less true in the tenement houses of New York, than in the barracks at St. Petersburg, that the supply of sunlight in the habitations of the people has been found to bear a very direct relation to the prevalence of diseases that came under the cognizance of physicians; scrofula, ophthalmias, tuberculous diseases, fevers, and all forms of disease arising from low vitality, are to be found in all the tenement houses of New York in which sunlight is not freely supplied. I may hereafter refer to some details upon this subject, and allude to streets and places where immense tenements are located, and in which certain diseases prevail, evidently very much influenced and aggravated by the absence of sunlight.

Under the third head, namely, *the supply of water*, the city of New York is favored above almost every other city in the world; and were the Croton water supplied in larger quantities, and more equally applied to the wants of the population of the city, it would confer far greater blessings than it now confers. The poor in this city are not all amply supplied with Croton water; too many of our population still beg it from the corner store, or from neighboring hydrants. Again, it is not supplied sufficiently to the sewers and to the securing of the cleanliness of persons, places and streets; but undoubtedly it will be so supplied and applied under the excellent management of that department of the city government that has the control of the Croton water.

The personal causes or agencies affecting health, I would briefly include under the following heads: First, constitutional; second, food and drinks, including, of course, markets and the general supply of food for the people; third, personal cleanliness; fourth, occupation and exercise; fifth, the moral condition of the people as affected by, and relating to, all the foregoing conditions; for the moral condition of the people is affected, in a very important sense, by their constitutional proclivities, and their constitutional and general physical conditions and the personal or constitutional peculiarities are affected by their food and drink, by the character of their residences, and by all the physical circumstances and surroundings of the family and the individual.

I would now allude to the first class of causes affecting the public health in the city of New York, as just classified for our convenience.

First, causes affecting to the state of the atmosphere. Admitting that we have those natural conditions of the atmosphere which are peculiarly and happily adapted to promote and preserve personal and the public health, we may be grateful for what nature has granted us in that respect—advantages unequalled by any other large commercial city; the natural temperature; the natural humidity, which bears an important relation to temperature; the natural provisions for the purification of the atmosphere, namely, the proximity of the sea and its broad estuaries that sweep in deep channels on either side of the city; the open space between mountains and hills that compass the Hudson; the open sweep of the westerly, northern and easterly winds directly across the city—those winds that are most purifying, drying and healthy—and the completely unobstructed sweep of the sea breezes directly across the city from the south and east.

We possess a climate peculiarly adapted for the promotion and preservation of human health. No malaria floats in our atmosphere excepting such as arises from sunken lots or from imperfect drainage,—sources of disease entirely removable by human agencies. The natural humidity of the atmosphere of the city of New York is peculiarly adapted to secure us from the occurrence of general epidemics, and from pestilential diseases; yet there are certain localities in the city where the humidity of the atmosphere is very much affected by improper local and general drainage in streets and courts, especially in districts near the water sides. All those causes should



come directly under the control of the department of the public health of the city. The various manufactories, the use of steam for mechanical and other purposes, so far as it is thrown into the sewers, affects the condition of the atmosphere. The fuel that is used in the city of New York is not a source of general contamination of the atmosphere, as in most of the cities of the old world; and that goes to the balance in favor of our natural sanitary advantages. In that respect, perhaps, we are on a par with Philadelphia, and have an advantage over Boston, and over many smaller towns. We have much less smoke, and what we have that is offensive, might and should be so disposed of as not to affect human health in this city injuriously; but manufactories and the waste steam that is thrown into sewers, together with the imperfections of our sewerage, and of the local and general drainage of the city, seriously affect the condition of the atmosphere.

The immediate vicinity of the residences of the people is of course greatly affected by the character and habits of the residents themselves, and by the number and density of the population. First, local conditions affecting health, external to dwellings and other structures, are very imperfectly supervised and controlled, under the existing sanitary regulations in New York; and it is my opinion that they never will be properly regulated until there is introduced into some department of the municipal government co-ordinate with the sanitary bureau, a class of intelligent subordinate officers, thoroughly qualified as *civil engineers*, who shall when advisable, be under the advisory direction of the city inspector, and whose duty it shall be to inspect and to exercise a scientific control in all works of drainage, grading and paving.

The revised charter of the city, as well as the existing municipal ordinances, actually make ample provision for the exercise of all the skill and all the powers that topographical and civil engineers need have for securing the highest perfection in regard to all the works of construction and improvement that fall within the wide scope of the street commissioner's functions, and the duties and privileges of the Croton aqueduct department.

SKILLED SANITARY INSPECTION alone appears to be wanting to complete the grand arch of our municipal executive departments. The frame work of a very good system of city government has been erected, and when the public mind becomes enlightened in respect to all the great vital interests of the city, and when a proper public sentiment exists respecting sanitary protection and improvement, all the errors of our past legislation will be corrected. Then, and not till then, will the shame of executive powers purposely crippled for partizan ends, be taken away.

It seems to me that we have laws in too good abundance upon almost all subjects; but there is too little faithful execution, partly from erroneous and faulty legislation, but principally from indisposition and lack of intelligence in the executive departments of the government. But I do not think that the latter charge can at the present time be justly alleged of either the commissioner of streets, or the Croton aqueduct commissioners. *Skilled sanitary inspection* and control is required to act as the key-stone to the great arch of municipal departments; that department was designed to search for, to investigate, to report, and to remove *all physical causes of preventible disease*.

I will enumerate a few of the improvements that should be speedily effected.

Every house, every tenement, every manufactory, and all ware-houses and places for storage should be provided with a perfect system of local drainage. The minor drains, or the house and lot drainage, should bear proper relations to the street, or general sewerage; and all these should be properly trapped or secured from the recurrent passage of noxious vapors,



and in the vicinity of dwellings and manufactories, should the possibility of such a recurrent flow of noxious vapors be prevented, and especially *within* all dwellings, public houses and manufactories. These precautions or securities against the poisonous sewer gases are not provided for by law, and seldom do we find them properly provided for even in the mansions of the wealthy citizens; much less do we find them in the hotels, boarding houses and manufactories. I mention these causes because they are sources of great danger, most liable to be overlooked, and there is a lack of responsibility, not only in regard to the low tenement houses, but in respect to our best dwellings. Recently, in a dwelling that was purchased at a price of \$22,000, such a recurrence of noxious vapors was daily perceived in all the dormitories of the house. Upon examination it was found that there were no sewer or stench traps connected with the drainage of the dwelling. There are multitudes of such cases, especially among the hotels, boarding-houses and crowded tenements. The mysterious and terrible epidemic that visited the National hotel at Washington was produced by this cause.

I believe the works for drainage in every house, and in every lot, alley, court, and street in the city should be subjected to the inspection of the sanitary department of the municipal government, and that every plumber should be licensed by that or some co-ordinate department.

I think that such surveillance over the domiciliary and yard drainage in this city will eventually be found necessary for protecting an over-crowded and constantly increasing population from a most common and prolific cause of atmospheric contamination, and of epidemic as well as sporadic disease. The noxious effluvia from sewers, drains, and privies, produces perhaps as much disease as any other single cause in cities, and the diseases thus produced are peculiarly obstinate and fatal. In a subsequent stage of my testimony, I will refer to the influence of such sources of disease. They are wide-spread; they exist in all parts of the city, but especially in the crowded districts, in tenement houses, in manufactories, in courts, alleys and the various passages and areas, from whence air is supplied to human habitations in this city. The supply of air in most of our dwelling-houses, as well as in hotels and all classes of residences among us, is generally irregular and very insufficient. This remark applies as well to the most costly mansions and edifices, with certain exceptions, as to the most miserly tenement structures. It applies also, most unfortunately, to many of our large public school edifices, to our churches, and to nearly all our places of public resort. These causes effect human health in the city of New York to an extent that it may be difficult to estimate, but with a certainty that is fearfully estimated by the physician who attends to family practice or to public eleemosynary service in New York. The effects are seen in all classes and in all places. They are seen little less fearfully in the wealthiest families than in the poorest; for the places of public resort—the assembly room, the theatre, the concert room, and the church edifice, are alike constructed without reference to the natural rights of every human being to breathe a sufficiency of pure air at all times and in all places. I speak of it as a *natural right*, and I would speak of it as a right which should be *secured* to every human being, and it is a right which may be secured without infringing upon any personal rights or privileges.

Our public school-rooms, which, in more senses than one, are a great credit to the city and State of New York, are generally over-crowded; too many pupils for the space occupied, however well that space were ventilated by any arrangements and agencies that can be supplied. But with scarcely an exception, the school-rooms of New York are so imperfectly ventilated that they become places of danger to the tender lungs and delicate frames of children. How far legislation, under a democratic form of



government, may be competent to control these evils is yet to be seen ; but much can be done, and that which can and may properly be done, should speedily be effected.

The supply of air to those classes of tenements, where the occupant is from necessity compelled to accept that which the proprietor of the house has provided, without the means of removing evils, should come more particularly, I think, under the jurisdiction of the department of public health. This may be effected in various ways. First, our tenement houses are generally built in crowded districts, with reference to the strictest economy of space, both as regards the ground occupied and as regards the space of the apartments ; and all these apartments are, with a very few exceptions, constructed with a total disregard of the natural requirements of the human frame, as regards both air and light. There are districts in this city which are so over-crowded that there is a lack of strictly pure air for respiration. Such districts should become less populous ; but happily those districts are not so numerous as in most other large cities. Our streets are wider, and the selection of places for residence is much more favorable than in almost any other city that I have visited, and much greater than in the cities of the Old World which have become over-crowded. But there is an over-crowding of particular tenements, wherever situated, which needs regulation. We find, in certain places of the city, upon twenty-five feet of street frontage, long tenement houses built upon the whole length of the lot, and that faced by another tenement, owned perhaps by another proprietor, allowing but a narrow space between the two tenement houses, where, of course, but an imperfect supply of air is enjoyed, much less is there a supply of natural sunlight. Such modes of construction should be so controlled as to prevent the exclusion of sunlight, and so as to secure free ventilation.

We find rear tenement houses in almost all the districts of the city known as the tenement districts. Those have been very graphically described by the Tenant House Committee, appointed by the Legislature of 1856, whose report was transmitted to the Legislature last year. That report contains many startling details, but it by no means presents a complete view of the subject. There are such a variety of faults in our tenements, for the laboring and poor population of New York, that it would require almost a volume to describe them, and much more to describe the places and their inhabitants. These are the favorite haunts for all forms of diseases that endanger the public health ; small-pox and all the eruptive diseases not only are present in the city and always making their places of election in such localities, but whenever an exotic disease becomes epidemic in New York, it is sure to find in those localities the soil and circumstances most favorable to its development into an epidemic. Such diseases as fevers, erysipelas and all contagious or infectious maladies, are those that most endanger the health of the community, and they are super-induced by the general contamination of the air. That is very well illustrated in the history of the cholera in 1849. The whole city was equally exposed to cholera, perhaps, if we regard cholera as an exotic disease, as we must ; and this tendency of that malady was so marked in 1849 that we could tell beforehand what districts were particularly exposed to that epidemic. The same was the case, too, in the early period of cholera, in 1832 ; and the same will be the case whenever cholera or any similar epidemic occurs in this city. I refer to these facts, because by them we see the relation which the residences of the laboring and poor population of New York sustain to the general sanitary interests of the public health, and to the commercial interests of the city.



THURSDAY, November 4, 1858.

Dr. HARRIS, continued—I proceeded the other day to state some of the facts respecting the external supply of all to buildings, and some of the sources of contamination of the atmosphere. I had, I believe, completed that subject, with the exception of a few remarks I would add respecting local and house drainage. The house and yard drainage in this city is very imperfect, especially when we consider the natural advantages for drainage. The drains are not only insufficient, but are so constructed and arranged that they fail in securing such drainage as is necessary for the preservation of a pure air in the vicinity of dwellings. In the vicinity of tenements, as well as in some of the hotels and boarding houses, this is particularly true. As I remarked, it would seem to be necessary, in order to remedy this great defect, that in the Croton aqueduct department, in the street commissioner's department, and in the department of the public health, very careful attention be given those topographical and hydrological facts and principles which must necessarily be taken into consideration in all works for good sewerage and drainage. In other words, the intelligent civil engineer should be consulted in all such works of construction and improvement, while the officers of sanitary inspection, under the direction of the chief officer of the health department, should, as the law already provides and directs, faithfully inspect all the works for sewerage and drainage, as well as search for and "*investigate the nature and relations of all the nuisances and other causes of disease that may exist in this city,*" as directed by special law in the language I have just used.

In too many instances the plainest principles of *civil engineering and hydrology* are disregarded in the drainage for the new buildings and new blocks of houses, no less than in the older; and it is impossible to preserve a pure atmosphere where the local drainage is continually imperfect. Hence, it is manifest that in some manner the sanitary bureau should exercise sufficient control over those particular sources of atmospheric impurity which constitute sources of public and personal danger, as will ensure the speedy improvement of the local drainage of all sections of the city. These desirable objects so essential to the preservation of a healthy atmosphere, are actually provided for by the existing statutes and ordinances relating to the powers and duties of the Croton aqueduct commissioners, and the commissioners of streets, in connection with the special and scientific inspection and advice which our laws require at the hands of the city inspector. The Croton aqueduct board has the general control of the sewerage, and having a supply of the Croton water for the city, and having competent civil engineers in their service, it is manifest that that board is already well adapted for the important services that are incident to the extension of its jurisdiction to the local drainage required for individual buildings and lots. Such service should be, as it is, sufficiently under the advice and control of the city inspector's department to secure the great object that is sought, namely, the preservation of a pure atmosphere. I have spoken of *local drainage* in distinction from the general sewerage,—the drainage of lots and buildings in distinction from the sewerage of the streets. The sewerage of the city should be what it really pretends to be, a system of general drainage, corresponding with the great vascular system in the animal frame. Its minuter ramifications are those connected with the individual residences and their various apartments, and the individual lots and yards; the larger arterial trunks, those that course beneath our streets and to the water sides. The Croton aqueduct department is directly interested in the use and the waste of Croton water as connected with house and yard drainage. There is no doubt that the department of the public health and the Croton aqueduct commissioners can labor har;



moniously for the promotion of the same great end, namely, the health and the comfort of the people.

Before leaving this subject, I will venture to make a single remark with regard to the desirableness of the improvement in the cleansing of streets and sewers. Where water can be supplied in sufficient quantities, gutters and drains, as well as the great sewers, should be flushed with water at frequent intervals, especially in hot weather. Such use of the Croton water would, in this city, necessarily be subject to the control of the Croton aqueduct commissioners. It would, therefore, seem to be expedient that the cleaning of streets be placed upon such a footing and under such control as will most completely harmonize with the interests which pertain to the department having charge of the sewerage and drainage; and if it were practicable it might be desirable that it should be under the same board of control, particularly as the use of the Croton water might greatly promote the work of cleansing the streets. The more numerous the boards of commissioners having charge of departments of public service, so similar in their nature, the less perfectly, as a general rule, will the work be performed. As in the case of the sewerage and drainage, the general cleansing of the city and of particular places should be subject to the advisory direction, and in case of negligence, to the absolute control of the department of the public health, as the removal of all nuisances should invariably be. The contamination of the atmosphere, from the filth of the streets and the surface of the earth generally, throughout the city, is a subject that always interests the public, and yet no really efficient agencies are at work to relieve the filthy condition of the streets; and it is to be feared that if the present neglect of our moral filth should long continue, in connection with the existing faulty condition of the drainage, the atmosphere of New York may sooner or later favor the generation and spread of pestilential epidemics.

*The internal supply of air.*—The supply of air in the abodes of the people, in the hotels and churches, assembly rooms, work shops, jails, hospitals, schools and private dwellings, as well as the crowded tenements, is a subject so indispensably important to public as well as personal health, that it would seem at first glance the whole should come under the surveillance of the sanitary bureau. In a government like ours it is difficult to decide how far legislation can be made available for such an object, and perhaps legislation cannot be made available further than such sources of danger and disease can be shown to affect the public safety, as regards the origin and spread of epidemics, or as regards the general cause of diseases; as in large workshops, in hospitals or in school rooms. As far as the supply of air to tenements and to workshops affects pauperism, the causes would come legitimately under the direction of the department of the public health. The importance of the supply of air to dwellings, and to all the places where human beings are congregated, has been so well illustrated by Prof. Joseph M. Smith, before your committee, as I am informed, I would only refer to the subject as illustrated by that learned gentleman. Prof. Smith is very high and accurate authority upon that subject.

The State would seem to owe it as a duty to the poor and the ignorant; in other words, a duty to itself, to guard that class of our population from those sources of disease that can be readily controlled; and the supply of air in human habitations, which are prepared especially for the dependent and unenlightened classes, is manifestly within the control of the municipal and State governments. Yet a complete reform of the abuses that exist in our tenement houses, of the sanitary defects and evils that exist in all our public assembly rooms, in our hotels, in our workshops as well as in our



private dwellings, can only be removed effectually and permanently by the *diffusion of knowledge upon the laws of life and health*, with reference to such improvement as well as to the elevation of the people. It would seem desirable that in all our colleges and higher schools there should be professorships established for instruction in hygiene, and the sciences of domestic economy and common life. It is desirable that in our schools the study of the laws of health, the natural wants of the human body, should be made *imperative*. Such studies cannot *safely be neglected*; any other department of study can much more safely be neglected.

I will not go into any details respecting the actual condition of our tenement houses, further than to give a few illustrations of the relation of our crowded population to pestilential fevers. It is almost uniformly observed that typhus fever is confined to the crowded tenement houses or the crowded boarding houses in this city; and whenever that form becomes epidemic, whether locally or generally in the city, those crowded neighborhoods constitute the great foci of malady. A few years since, when typhus fever was not at the time particularly prevalent, in this city one case of that malady was brought into a crowded tenement building not far from the City Hall, near Franklin Square. The tenement occupied about forty feet of street frontage and contained, at that time, a population of about one thousand souls. That patient was removed to the hospital, by order of the agent of the board of health, the day she was first visited by the physician. There had been no fever in that tenement for a long period previous to the occurrence of this case, but within a fortnight, sixteen cases of typhus fever had occurred in these suits of adjacent apartments in that tenement. Its progress was arrested by vacating the floor above and the floor beneath, and by a general purification of that portion of the establishment, by white-washing, cleaning and ventilation. In the same tenement building, in 1854, the very first case of cholera occurred. That case was sent to the hospital immediately upon the visit of the physician, and died the next day. Two other cases occurred during the subsequent day, in adjacent apartments. That section of the tenement was vacated in the same manner as the section in which the typhus fever had occurred, had been vacated the year previously, and a general purification of the whole establishment was faithfully carried out by the owner or agent. All garbage in the vicinity was immediately removed. Large quantities of lime were used; white-washing was thoroughly performed, and the vacated apartments above and below where the cholera had occurred, were thoroughly cleansed and ventilated, and remained vacant for some time. No more cholera occurred in that immense packing-house during the season of 1854. Now, in that case we see, first, how readily infectious diseases spread; first the typhus fever spreading to the extent of sixteen cases almost immediately, and the peculiar character of the locality having prepared the entire population of a thousand people inhabiting that dark and over crowded locality, for any fatal epidemic. So in 1854, the terrific scourge of cholera threatened to sweep suddenly to the grave that densely packed population; but at once, upon the outbreak of that fatal malady, the agent and the proprietors solicited and followed my advice; and by the faithful purification of the entire establishment, and the strict quarantine of the contaminated apartments, the destroyer was arrested.

All the exanthematous infectious diseases, such as small pox, scarletina and measles, have their favorite haunts in these crowded tenements, and it is in those localities, too, that the percentage of mortality from those diseases is largest. It is more than one hundred per cent larger, I believe from personal observation in such localities, than in localities where the atmosphere is tolerably pure. Yellow fever, which has been a threatening



disease for the last century, and which only occasionally has visited the city, has selected its victims and found a congenial soil and atmosphere in the lowest and the most crowded localities. There are exceptions, however, to that as a general rule, the most marked of which was in 1822, when that fever spread in one of the most fashionable sections of the city, near the lower part of Broadway, and even then it obtained its first nidus and hot-bed for reproduction, in the low, damp, dark and filthy section of Rector street. But when yellow fever occurred in this city as a fearful epidemic, as in 1795, 1798, 1799 and in 1805, it commenced and continued in the crowded and filthy sections of the city, and having once commenced in such localities, we know, from the readiness with which that malady spread in the healthy district of Bay Ridge, on Long Island, as well as from the history of yellow fever in this city in 1822, that it may extend to the healthy districts. The same is true respecting the general prevalence of scarletina and any of the infectious eruptive diseases.

Without dwelling longer upon the subject of ventilation, and the relations of the air to various forms of disease, I will again simply refer to the subject of the supply of *light*, as being indispensably important to health.

It is manifestly the duty of the department of public health to have some direction over the supply of light in human abodes, whether in dwellings or in workshops, in schools or other places of public assemblage. We have no laws in our country forbidding the use of any number of windows, as was for a long period the case in Great Britain, and no apology can be offered for a deficiency in the supply of light; and could all human abodes in this city be well supplied with light, we should see vastly less of scrofulous diseases, and vastly less of opthalmies—less, in fact, of all diseases of debility, *and less of crime*. The supply of light and air go together; where one is supplied, the other is very sure to exist. A distinguished foreign writer has remarked that *fevers* and *crime* spring up and flourish in the same localities, and that they are indigenous productions of the same soil. Let moralists account for it how they may, the experience of all observers confirms the fact that deeds of darkness and crime occur almost spontaneously among the inhabitants of unlighted human abodes. The depressing effect of the continued absence of sunlight is so great, that the free use of artificial and alcoholic stimuli is almost inevitable among the tenants of unlighted habitations.

*The supply of water.*—As to the supply of pure water in New York, its citizens have but little to ask, and that little is to be asked in favor of those who cannot provide for themselves—the poorest of the population—and when the supervision of tenement houses and crowded places comes more directly under the inspection of the department of public health, any evil of that kind can easily be remedied.

Respecting the cellar population of New York, they are destitute of both air and light, and exposed to the continual causes of disease and discomfort.

In the year 1850, an investigation was made in this city, under the direction of the police department, by the advice of Dr. James Stewart, one of our best physicians; and the results of that investigation were so astonishing that they seemed rather fabulous than true, and yet the truth could not well be told. It was found that there was a population of nearly 29,000 living below the surface of the earth; and it was found, of course, that that population was suffering almost universally from disease, and from all the sources of discomfort which we know to be connected with such places of residence. What the present number of that population may be, I do not know, but it is believed to be about 25,000. The results of the investigations were published in one of the city papers, under the appropriate heading, “Dens of Death in New York.” That series of articles was



founded upon fact. The use of cellars as residences should be strictly prohibited. None but the poor will occupy them, and they occupy them from a *compulsion* which they cannot well resist, and from an *ignorance* which prevents them from seeing their own interests. That class of people should be provided for. Our *hospitals*, our *poor houses*, our *dispensaries*, and our *prisons*, show a very large class of representatives from that population.

I will proceed to speak of a few sources of disease that are more strictly personal than those that have been referred to, which would seem to come properly within the scope of just legislation, and municipal or State legislation, for large cities. First, those that affect the human constitution—using that technical and very common term, for the sake of brevity. Those causes that relate to the human being from the first moment of his existence, until his death, and which exist strictly within himself, may be included under the head of such causes as relate to marriage and birth, and to the provision made for the cure of sickness.

Though it has been recommended by some of our own distinguished physicians, that our health laws should take cognizance of those causes that affect the human constitution, and which are concerned in marriage and in the procreation of offspring, I apprehend that under a democratic form of government, the most that can be effected, will be a careful investigation respecting the actual facts that are desirable in our communities, and a proper registration and study of those facts, a proper publication and discussion of those facts by the officers who are placed in charge of the sanitary interests of the people. That is a very rational way of overcoming the evil; it is a moral suasion not less certain and not less powerful than legislation, that would command changes in respect to any of those causes affecting constitutional health and life. It is a sad fact in this city, that our poor population is our most *prolific* population; and it is furthermore true, that the habits of that class of our population, as well as the misfortunes incident to their modes and conditions of life, ensure the early death of a large proportion of their offspring at an early period. And one of the most unhappy results of this infant mortality among the poor, is, that they continue to multiply and increase with an amazing rapidity,—thus throwing into the population of the city, immense numbers of imperfectly organized and imperfectly nourished human beings. Hence arises a vast infant mortality in our city.

It should be borne in mind that the laboring and the ignorant poor in the city are very sure to live in such an unnatural and unhealthy manner that disease is inevitable, while the same population, removed to rural districts, might enjoy remarkable health and vigor. The infant mortality in the Fifteenth ward, the infant mortality in the Fifth avenue, and in our most intelligent and wealthy families, is not larger than in other cities. In my opinion it is not larger than in the rural districts; but we have an immense infant mortality in the city, and that is among the poor and the crowded population. It is in a very great degree among that class of imperfectly organized human beings to which I have referred,—children born with imperfect constitutions,—imperfect, too, from causes which we cannot control without *elevating the parents* in the moral and social scale. Hence, when we speak of *reforming* certain great evils in the city of New York by legislation, it is necessary to take into consideration some of these causes which are so difficult to control, and which are particularly connected with the moral condition of particular classes.

The provision for the sick is another important element in the class of agencies that effect the human constitution, in any community and in particular families; and that provision, in this city, may be considered as very ample, though we have not as many hospitals as most cities of the same



population in the old world. We have, perhaps, the best general system for supplying the wants of the sick poor of any city in the world. Our dispensary system may be considered, under the existing circumstances, as very nearly perfect. Our hospitals probably afford beds enough for all who can properly be inmates of such institutions.

But there is a special cause of the deterioration of human health in the city of New York, especially in the poor population, which is widely acting, and yet under no surveillance whatsoever. I refer to venereal diseases. Delicate as the question is, "How shall we control the dominant passions of man?" it is manifestly the duty of good government to guard the poor, the ignorant and the vicious from dangers to which they are not only continually exposed, but to which they are powerfully impelled by their perverted natures. And dangerous and difficult as it may be to legislate in municipal or in State governments upon the question of preventing or limiting the evils of prostitution, it will yet appear in the city of New York that the evil must be limited, and measurably controlled by legislation and medical surveillance. It may not be in our day that the moral sense of the community will be educated and aroused to the danger that exists among us, but the danger does exist and does increase in such a manner as to awaken alarm; and it is in a very great degree the poor and the ignorant classes, and the uncontrollably vicious population of New York who perpetuate and extend this particular source of danger to the constitutional health of the people. The immense number of children annually born in the city of New York with the mark of this monstrous evil upon their infant frames goes to swell the percentage of mortality, and constitutes in itself one great cause of that mortality. Venereal diseases must be considered as among the most prolific sources of the deterioration of human health among the poor. The evil will sooner or later come under the surveillance of some branch of the sanitary department of the municipal government. It now comes under the care of the physician in the public institutions, but when it is *too late to save* that immense number of infants that are being thrown upon the world with diseased frames—too late to save unfortunate wives and mothers from disease and suffering.

*Intoxicating Drinks and Narcotics*:—The use and abuse of narcotics, alcoholic drinks, &c., which effect the human constitution, may properly be considered under the head of food and drink; upon it I will say a few words. I apprehend that while we cannot control any portion of the population in respect to the food they use, we can at least inspect some of the sources of their food, and that inspection pertains to the city inspector's department. The poor population of this city need among them a class of medical missionaries; they need as well to know the gospel of common things, as any of the heathen in foreign lands need to know the Gospel of divine things. We have no class of medical missionaries excepting dispensary physicians. We have, as yet no branch of service in the city inspector's department which takes cognizance particularly of these very domestic concerns of the poor. At any rate all deteriorated articles of food, decayed vegetables and decaying meats, as well as all drugged preparations, and drugs and medicines, so called; these should come under medical surveillance as far as may be consistent with our forms of government; especially as relates to drugged preparations, and perhaps all forms of alcoholic liquors. These are important questions, which should be calmly discussed and carefully decided, but particularly with reference to drugs and medicines, so called, most of which, taken in considerable quantities, are necessarily poisonous. Some legislation is required. Hundreds of dollars are paid for medicines by the poor where none should be procured, and the popular mode of displaying medicines to the ignorant is most pernicious in



its effects. There should be some control over the popular advice that is given to the poor, who always are suffering from some ailments. The amount of money paid by them for medicines is immense, and the utility of such medicines is always questionable, and, usually, instead of being useful they are directly injurious. I would say that of the best drugs that can be found in any apothecaries' shop; for drugs and medicines are among the evils that physicians have to deal with, and ought not to be counted as among the benefits that physicians dispense. The highest function is to prevent disease.

*Public Baths*.—In regard to personal cleanliness, this city requires further provisions for *public baths*. A general survey of the sanitary wants of the city necessarily includes that subject. The question of their establishment is to be settled by a further investigation of the means by which they can be sustained. We have one general establishment of the kind, which is nearly self-supporting, and which is conferring great benefits upon the poor.

In regard to occupation and exercise, the department of public health can and should take cognizance of any absolute control over employees, artizans and workmen, which compels them to work beyond a reasonable length of time. To be sure there is a legal remedy already provided, but the poor do not always know of that. Children, particularly, should not be over-worked; and in some of our factories and shops young children are kept at work for a very protracted period beyond what they should endure. Disease and increased mortality are among the consequences.

*Moral and Reformatory Institutions*.—The moral condition of the people stands so immediately related to their physical, that it is difficult to improve the one without improving the other. These moral effects are, perhaps, more completely under the control of the sanitary laws affecting the physical condition and wants of the people, as far as the poor, the destitute and the ignorant are concerned, than under those influences that are commonly denominated moral and religious influences. We see a demonstration of that in the institutions at the Five Points; in the Children's Aid Society, and in the Industrial Schools. We see that where provision has been made for the natural physical wants of the poor, the destitute, and the most vicious of our population, the moral condition of that class, however depraved, has been most effectually reached, at least so effectually as to teach great lessons to the humane, and to furnish for our municipal government an instructive example of *an economy of means* in the provision for the poor and the vicious. I would like to introduce a passage from a recent paper by Dr. Simon, of London, the distinguished medical officer of the general board of health, of London.

Dr. Simon's paper was addressed to the board of health, and has just been published by Parliament. He says: "It is well to remember that such physical and such moral conditions could react on one another; that the local circumstances which are hostile to health are likewise hostile to moral and intellectual education. It has been my duty to make myself very intimately acquainted with places respecting which it may with truth be said, that vice, and ignorance and brutality are among their active causes of disease. But from my first moment of personal intimacy with such places till now, my assurance has grown stronger and stronger that it is much more difficult than the wealthy and powerful can imagine for those who are born and bred in courts, which are nurseries of cholera, typhus and scrofula, to emerge from their wretched childhood otherwise than vicious, ignorant and brutal. The same soil nurtures both growths of misery. And when social reformers jointly address themselves to these afflicting scenes, it is no easy problem to determine, whether by their indirect co-operation, the school.



master and the minister of religion do more for the bodily health, or the sanitary improver more for the progress of education and for the lessening of crime."

MR. CHAIRMAN: The State of New York has always assumed that it was a great privilege and a great duty, to promote the intellectual and the moral interests of its population. To promote the educational and moral interests of the youth of the State, is esteemed directly a subject of legislative duty; and in this paragraph from Dr. Simon's paper, that principle is very strongly stated, indeed. Were it not for the fact that all these domiciliary and local sources of disease, of discomfort and of death, are in most instances directly connected with the moral condition of the people—directly connected with the history of crime, and with the history of pauperism and vice in every form, it might be a more difficult question to decide whether sanitary laws could or should reach this class of our population, because those that are blind cannot always be made to see, and those who will not see, sometimes deserve to be in darkness. There are many important facts and statistics to which I might refer, if the committee has any desire to propound any questions or investigate any particular point. I have been very busy and have not been able to prepare anything beforehand. There are some facts relating to our mortality I could state. There are some facts relating to the occurrence and disposition of contagious and infectious diseases in New York, that I could state if there are any questions to be answered respecting them.

I would refer to one simple fact which appears in the history of the Quarantine establishment of this port, as illustrating the continued presence of contagious and infectious diseases within the city of New York. A vast majority of the cases of disease treated at the Quarantine hospital, are conveyed *from the city* to the Quarantine establishment, rather than from vessels to the hospitals there. That being the case, we have the fact then clearly before us, that our great Quarantine establishment is sustained no less for diseases that are found in our crowded streets, than cases of disease that arrive on vessels and are detained at Quarantine.

It appears that in the whole history of the Quarantine establishment, from 1798 until 1858, there were 72,595 cases of disease treated in the Quarantine hospitals. Of that number, 33,807 were admitted to the Quarantine hospitals from the city. Yet in the early history of the Quarantine establishment, very few persons were admitted to the marine hospital from the city; during the first years, very few indeed; but in the last eleven years, the proportion of cases admitted from the city, is vastly greater than those admitted from the vessels. That is especially true of small-pox and typhus, and has been true of other diseases. This does not affect the mortuary register of our city inspector, but it shows the fact that you have these contagious and infectious diseases in large numbers in the city, and under such circumstances as to be subject to the regulations of Quarantine, and being in our midst, the city is greatly endangered, if we continue to foster nests for such disease.

Typhus fever is not only generated in the habitations of the poor, but it furnishes the soil in which such diseases spread most rapidly; in other words, the localities crowded by our poor population, particularly furnish food and fuel for all forms of infectious and epidemic diseases to which our climate and population is liable.

MR. ELY: What is the law with regard to the removal of the sick? I supposed they were taken to Blackwell's Island hospital.

A. First, all foreign immigrants, who have resided in the city of New York less than five years, when suffering from any form of infectious or contagious disease, except venereal diseases and the itch, are liable to Quarantine.



tine restrictions ; secondly, all sick persons who otherwise come under the jurisdiction of the board of health in the city, suffering from infectious and contagious diseases, whether immigrants or not, may be sent to the Quarantine establishment, at the option of the board of health ; thirdly, those who have escaped Quarantine restrictions, or who have sickened of infectious diseases after passing Quarantine.

Mr. SCHELL—That only goes to show that the actual mortality of this city is greater than shown in the city records.

A. The Quarantine establishment is a part and parcel of our city, to all intents and purposes. There have been upwards of 33,000 persons provided for at the Quarantine establishment who were sent from the city during the last eleven years, but who added only to the population and to the mortality of Richmond county. Most of this immense influx to Quarantine has been from the foreign population. More than half of the patients treated at Quarantine at the present time, on an average of a few months or a few years, are sent from the city. Small pox continually exists in this city among recent immigrants as well as among our native born population.

Q. What proportion of these people die ?

A. The cases admitted from the city die in quite as large a proportion as the cases admitted from ship-board, and the whole number of deaths out of the 72,595 has been 10,493.

Q. What proportion does that bear to the sick that are sent to Blackwell's Island ?

A. The percentage of mortality at the Quarantine establishment is necessarily larger than at the Penitentiary hospital ; the diseases are acute, and patients are often sent from the city to Quarantine in a dying condition. The diseases being more malignant, and the sick often being sent in a dying condition, the ratio of mortality is necessarily large ; but, as you see, the percentage of mortality has been very high, taking the whole period since the opening of the Quarantine establishment. Of that number, 5,000 of the deaths have probably occurred among those that were sent from the city. It would be impossible to decide that question, however.

We have continually in our streets, exposed too often to public gaze, and daily exposing a vast population to disease, cases of infectious or contagious diseases ; even the small pox not unfrequently can be detected beneath a veiled hat or bonnet in our city railroad cars. Small pox repeatedly, day after day, has been conveyed to the Staten Island Quarantine hospitals by the public ferry boats. The cases wander to the boat under some information or advice sufficient to lead them thither, and in that manner the crowds in our city as well as the crowds upon the ferry boats, are frequently exposed to that very contagious and loathsome disease. The same is true of some other forms of disease that are infectious, which are not under special surveillance in the city. Small pox not unfrequently occurs in the residences of our best families, most remote from the poor. Small pox frequently occurs in our hotels, and among the multitudes of strangers visiting our city. And worst of all, that most loathsome malady is continually being diffused throughout the entire length and breadth of our country, by means of persons and goods that have here become contaminated. I have personal knowledge of a number of such instances, in which merchants and business men, strangers and families, have, on visiting the city, returned to their homes in our own and other States infected with small pox themselves, and, unfortunately, infecting whole communities in distant localities. Indeed, Mr. Chairman, as regards small pox, the city of New York has become a great pest-centre, from whence that dreadful malady is widely and continually diffused throughout the country.

This fact already seriously affects the commercial interests of this city.



Boston and Philadelphia are reaping the *only advantages* which can be said to result from the neglect of proper sanitary surveillance over small pox and other diseases in New York. This great public evil *must and will be* entirely remedied, and that in a single year, when the sanitary bureau is what it should be in this city.

Though the prevalence forcibly illustrates the importance of radical improvement in the sanitary police, and shows that a reorganization of the department of the public health, is most assuredly demanded in this city, there are many other facts and considerations connected with the condition of our city, that illustrate the same point, even more forcibly to the friends of sanity and moral improvement.

A learned writer on state jurisprudence, has said, that *medical polity is a necessity to every State*; and all men admit that the safety of the people is supreme law of the realm in any enlightened country. Such sanitary safety cannot be secured to the population of a great commercial city, without the aid of a specially skilled staff of really scientific sanitary officers.

Many of the cities of the old world have demonstrated this fact most clearly; and in our own country we are demonstrating the same proposition *per reductio ad absurdum*. The city of Providence, however, is affording us positive and direct demonstration, of the utility of employing specially skilled sanitary officers.

I would like to introduce at this point a recommendation, which was made to the crown, by the commissioners appointed to investigate the health of towns in Great Britain, as illustrating the final result of much said on the part of disinterested persons, persons not only entirely disinterested as respects the appointments recommended, but actually engaged in other avocations than those of practicing medicine. After giving their reasons, they say: "*We therefore recommend that the local administrative body have power to appoint, subject to the approval of the crown, a medical officer properly qualified to inspect and to report periodically upon the sanitary condition of the town or district, to ascertain the true causes of disease and death, more especially of epidemics, increasing the rates of mortality and the circumstances which originate and maintain such diseases and injuriously affect the public health of such town or populous district.*"

It would be entirely practicable to secure efficient scientific medical inspection of every district and locality where disease is liable to prevail in this city, but such service to be effectual should be conducted by men, *specially skilled* and qualified, and that class of men should be selected with as great care as any class of public servants that are called upon to fill any places of trust in the municipal government. It is a delicate task to inspect the habitations and make inquiries respecting the habits of any class of our citizens; it is perhaps a still more delicate task to undertake to instruct, advise, or direct them, and yet all this service should be performed for the poor and the ignorant, at least; and it were well if it were performed for all classes of our population, who congregate in great numbers in any given locality, particularly hotels, boarding houses, workshops, printing establishments, ware houses, churches and schools. I say a delicate and a difficult task, and yet it is a work that should be undertaken, if a proper plan can be devised and the public mind properly prepared to receive such a class of public servants. The question whether they should be medical men or not, is of far less importance than that they should be men of science, and men of philanthropic spirit. A medical man, if he is worthy the name of physician, has both.

Mr. SCHELL—We have a great many poor around our streets, begging. What effect do they have upon the health of this city?

A. This is an important question, and it is one that admits of a direct



answer. Begging and all forms of mendicancy which can be exposed in the public streets should be abated at once as a nuisance. It is dangerous to the community, dangerous to all classes of people who are brought into the vicinity of that class of persons who usually beg. The very odor of their garments is offensive, and too frequently, it is to be feared they are the means of spreading infections or contagious maladies. The sight is as offensive as the odor, but the moral considerations are the more important considerations, which should lead to the immediate removal of all such persons from the streets of the city. Most of all should this be done for the real benefit of the mendicants themselves.

Mr. ELY—Do you regard the location of quarantine, situated as it is, in a dense population, adjoining a prominent ferry to the city of New York, as dangerous to the public health of the city.

A. Our quarantine system is becoming such an eye-sore that I should prefer to answer the question by stating broadly that it were well for the sanitary interests of the city of New York if to-day the whole quarantine system were entirely abolished. *A rational external sanitary police system* would necessarily grow up as the result of such an event; a greater benefit of its kind could not befall the city of New York, its merchants, and its people, and all the suburban districts that have been exposed to pestilence because of the present location and management of quarantine, than the entire abolition of the whole establishment and the whole system; and let a rigid external sanitary police grow out of the necessities and interests resulting from such an abolition of the old system. Had we no quarantine system at the present hour, it would not require two months for an intelligent, thoroughly informed scientific physician, competent to deal with questions that would arise respecting a suitable sanitary system, for New York to provide such an external sanitary system, or quarantine regulations as would not only engage the universal support, and receive the universal approbation of the mercantile community, but an economical one which would remove every source of danger, so far as the sources of peril from imported infection or contagion are concerned. But it is a vexed question, it is a complicated question, and unfortunately *it is made a political question*. If the present quarantine system were abolished, the public must then provide a suitable external sanitary regulation. The question arises then, How can it be done? We have at present an *internal* sanitary police, which it is claimed needs to be somewhat enlarged or improved. An *external* sanitary system would include all the service that now pertains to the protection of the city from imported infection or exotic diseases. An external sanitary police of this kind, even with a military force, cannot protect this city and port, and it is not an efficient internal sanitary police. To illustrate this statement: when this city was in possession of the British troops, there was a constant inter-communication between the people beyond the city and the troops in the city. It was morally impossible to prevent inter-communication, and it has been found in all countries and places, absolutely impossible to prevent inter-communication unless the place to be guarded is guarded by persons directly interested in preventing such communication. Now there is no sanitary police in New York so efficient and so distributed as to prevent inter-communication between quarantine and the city, between vessels and cargoes infected and the city. Again, there never has been a quarantine system devised in the world either against plague, small pox, or yellow fever, that has been so certain in its operations, or the rules and regulations of which have so provided against the possible spread of disease that after all with the utmost stringency in the execution of any given code of regulations, there has not been a liability to the spread of disease. An illustration of that occurred last summer: A vessel was supposed to be free from infec-



tion because she had complied with all the regulations of quarantine and our board of health, and there was no human intelligence that could say positively that she would communicate the infection of yellow fever, yet there was a *liability*, arising from the fact that the vessel had sailed at a certain period subsequent to the first of May, from a port where yellow fever is occasionally epidemic, and probably would be constantly epidemic were there unacclimated material for the fever to feed upon; but in accordance with our very stringent laws respecting yellow fever, that vessel was allowed to discharge her cargo *according to law*, was detained at quarantine *according to law*, fulfilled her term at the quarantine anchorage *according to law*, discharged her cargo, was fumigated, and finally allowed to come to the wharves of this city *according to law*, and the first persons who went on board to examine the condition of that vessel contracted yellow fever and died. I saw them both. This is but an illustration of what continually occurs. Again, according to law, in 1822, the sugar and molasses and other cargo that arrived at quarantine from infected ports underwent fumigation, ventilation, and the cleansing required *by law*, were lighted to the city *according to law*, and beyond all question communicated the yellow fever to the district in the vicinity of Trinity church *according to the laws* of yellow fever. So we see that quarantine laws, of themselves, cannot keep yellow fever out of any city unless those laws absolutely shut out commerce from the West Indian and Gulf ports.

Now, it would be impossible from the very nature of things, for a commercial community like New York, to consent to any laws that will shut off commerce with the *West Indies*, five or six months of the best part of the trading season. We shall keep up commerce with the West Indies, and various other places where yellow fever is continually epidemic. We must, therefore, have some arrangements for the sanitary protection of this city, which will permit commercial intercourse; not only the merchants say that, but we say it as a people. The port of New York cannot drop its commercial intercourse with infected places. Savannah and Charleston can safely shut out commercial intercourse with any ports where yellow fever is epidemic. New Orleans can do it without much inconvenience; but New Orleans lies within the yellow fever zone, where fever is liable to occur every year. Galveston, Vera Cruz, Baltimore and Philadelphia might relinquish their intercourse with infected places without great inconvenience. New York is the great entrepot of commerce from those parts where yellow fever prevails epidemically; we must, therefore, have a quarantine system that will favor commerce, and, if possible, one that will not oppress the merchants. In my opinion, if the present quarantine system were entirely abolished, a new sanitary system would grow up, and it would be one which would remove, in a great measure, all the embarrassments which commerce experiences from the existing system, and which would protect the city. The external and internal sanitary police should work harmoniously together, if the health officer possessed sufficient scientific knowledge, and sufficient honesty. The city of New York should have a sanitary board whose special business it should be to look after all sources of danger, both on board ship and in the city; and the only expensive provision, in my opinion, that would be required for such a sanitary system would be suitable ware-housing, at some proper and safe point, for all *infected cargoes*; but vessels that have sailed directly from a port where yellow fever is liable to be epidemic; in other words, places that are situated in the yellow fever zone (and there undoubtedly is such a zone), though there may have been no cases of fever on board the vessel, nor any existing at such ports at the time of departure; may, notwithstanding, clear bills of health, convey to us an atmosphere that will communicate



yellow fever to our inhabitants. These are practical considerations, and we must look after those sources of danger with an intelligent eye, and with a conscience that cannot be induced to swerve from the interests of the public; and though it may involve the necessity of keeping all such vessels from the city during the hot season, when yellow fever is liable to be brought hither. It would not interfere with commerce if a proper quarantine warehousing system could be arranged, by the advice of intelligent scientific men, and intelligent merchants.

I wish to state in addition to what I have said upon this subject, that I regard quarantine system generally, as sources of great evil to the cities and places that they are created to protect. They create a false issue in the public mind, in respect to *the actual sources of danger*. *Yellow fever could not be propagated in New York every year*; our climate is such that it is only occasionally that we have the high degree of continued heat, and that degree of moisture and other atmospheric conditions that will permit it to spread.

Yellow fever has continued, as I am informed upon good authority, at the western extremity of one of the streets in Brooklyn during a considerable part of the past summer and autumn, but it has not extended. In 1856 it did extend though Furman street, and a considerable number contracted the fever in the neighborhood of South and Atlantic ferries. So in this city it became planted in various places, but did not extend; the sources of infection may reach us every year, and perhaps only one year in ten would it extend where the *fornites* of infection were introduced. Hence we are continually alarming ourselves, unnecessarily, respecting yellow fever infection and about exotic diseases. When people become considerably excited upon the subject of quarantine, and when there is a good *show* of stringency with regard to the restrictions and regulations of quarantine, the people become very easy; no matter what the season is, it is all the same to the people; they think they are protected by the Quarantine establishment, while all the expense of that establishment may perhaps have been incurred without producing any other really beneficial result than the *placeleo* it supplies for alleviation of public anxiety respecting an exotic pestilence.

Yet, situated as the port of New York is, a rational quarantine against yellow fever is a *necessity* of expediency for which our citizens must make ample provisions. It is high time that a more rational and just external sanitary system were provided for the port of New York; and I believe, sir, that such a quarantine system, based upon medical facts and scientific principles, may and should be immediately provided by our State Legislature. This quarantine or external sanitary system of the port needs to be more directly connected with the internal or civic sanitary system of New York; and the two departments should be under the advisory direction of a special scientific commission. But the safety of the city, as well as the great interest of commerce, demand that our quarantine system be entirely *re-cast* and revised, and that the necessarily restrictive regulations of this, our external sanitary system, be so simplified and so intelligently and honestly administered that the temptations to evasion of the laws be greatly diminished, and the rights and interests of commerce shall be justly guarded, while the health of the city may actually be ensured against exotic pestilence. All this will be effectually accomplished whenever the city and port of New York establishes a rational sanitary system upon the reliable basis of science and sound medical experience. Until then, the city of New York will not be protected from imported pestilential diseases, much less will our vast population be safe from the domestic causes of disease and death, that now give this city such an ignoble reputation for *self-created insalubrity*.



## TESTIMONY OF DR. WM. ROCKWELL.

THURSDAY, *October 28, 1858.*

Dr. WM. ROCKWELL testified as follows :

Q. Do you regard the health of this city as inferior to that of other cities ?

A. I do.

Q. What is your answer to the second question ?

A. I would say that a good deal of my answer would be governed by the statistics of the gentlemen who preceded me. Among the reasons, I would say, in the first place, the filthy streets, the undrained lots, and the filth collected therein, together with the recent erection of buildings on the whole of a lot. Almost all of the tenement houses are crowded together, so that there is both a want of light and of ventilation, which I consider essentially necessary to health. In many parts of this city landlords have been so avaricious that they have covered their whole lot with buildings. You will find perhaps where there is a real building on the end of a lot, that the man on the next street places his house close up to it ; and there is no possibility of ventilation through these houses arising from the faulty construction of the buildings. I have been in many tenement houses where my only guide to get to the upper part of the house was to hold on to the hand-rail in mid-day. Of course there can be no light or ventilation when they are built thus.

The cellar residences are another great cause of evil. I think there are not as many cellar residences as there used to be. Since these lofty tenement houses have been erected, people who have formerly lived in cellars have gone up into the air.

And there is another great cause, which can be summed up in one phrase, *bad rum*. It is the adulteration of liquors and the poisons that are sold under the name of spirituous liquors.

Q. Will you give us the ingredients of what is generally called bad rum ?

A. I do not know that I can, without referring to some written memorandums, but they are a compound of poisonous articles. Everything almost in the shape of liquors is adulterated, and I do not know how you are to get good ones, except we go back to the pure juice of the grape.

There is another terrible disease which carries off a great many persons, I mean the small pox. I do not know of any other disease where the proportion of deaths is greater than in the small pox. My impression is that one-tenth of the persons who have that disease die ; and by taking the statistics of our weekly reports of deaths, made by the city inspector, it is very easy to multiply the number of deaths by small pox in the year by ten ; I think it is full that ratio. Even where people in one of these crowded houses have had the small pox or been vaccinated, and are perfectly free from the disease and do not take it, the air is so vitiated, made so impure by the filth of that disease and the want of cleanliness, where it prevails in the habitations of the poor, it prepares the system for other diseases. I believe that small pox is the cause of other disease than small pox itself. The vitiated atmosphere that is created by small pox in one of these tenement houses fits the inhabitants for other diseases.

Now to the third question. In answer to that I can say, remove the cause and the effect ceases. All we have to do is to find out the cause of this increased mortality, and then remove it. The small pox, of which I spoke just now, can, in my opinion, be entirely eradicated with the power to do it ; there is no occasion for having a case here in a year. Vaccination is a certain and sure remedy if it is carried to the extent it ought to be carried. Every medical man knows that one vaccination will not render a



person safe, but it will modify the disease. The patient may take small pox, but he will have it in a modified form, called varioloid. The system is not fully charged with the remedy by one vaccination; a repetition is necessary. My rule has been to vaccinate and revaccinate until I could not make my patient take the kine pock any more, and then I consider them perfectly safe. I could give you several instances of that where I proved it thoroughly. There are many physicians in this city who go daily amongst small pox, and in hospitals, and never take the disease, and they have had nothing but kine pock very mildly, although they have been exposed some years together. When I was health officer at Staten Island, I was by right of office at that time principal physician of the marine hospital. I had Dr. Harcourt to assist me, who had charge of the small pox department. It was his duty to visit there two or three times every day, and he never had the small pox, yet he frequently revaccinated himself. Dr. Harcourt was born in that house, and lived there till he was thirty years of age. There is a very striking instance of the efficacy of kine pock. These instances are not needed to satisfy medical men, for they are perfectly aware of them. I would suggest that small pox might be driven from the community if the Legislature would take the matter in hand and pass a law making it imperative that people should be vaccinated. If we had a medical sanitary inspection, a census of the city might be taken every three or six months, of every family. And I would not confine this law to the poor, but I would make them go to the doors of the rich and enquire if every person in that house had been vaccinated or had the small pox; and the rich as well as the poor should be compelled to take up the remedy if they had not the disease. This work should be done by medical men. Filth and dirt does not produce small pox, and it can be removed from New York.

Q. What steps have been taken to prevent the spread of the small pox in this city.

A. When we get small pox very rife here, a mere recommendation is made for persons to call at the dispensary and be vaccinated. This is usually done by a proclamation issued by the Mayor. After the horse is stolen they lock up the stable door.

Q. Is anything done with regard to the vaccination of emigrants?

A. Yes, sir, there is. At this time every vessel that arrives with small pox on board, the health officer is in the habit of delaying every one who has not had the kine pock or has not been vaccinated, at the Quarantine ground. That is a very recent affair. There is a great deal of small pox brought to this city in emigrant ships, and it is a disease that is not easily eradicated from places. When I was health officer some years ago, there were certain vessels, packet ships, coming with emigrant passengers, that I fully expected to bring small pox every time they came, and knowing those vessels, I was very careful to examine them thoroughly for that.

Q. You think that the disease was generated on the vessel?

A. Yes, sir. I think that they had not cleaned those vessels sufficiently. Small pox is strictly a contagious disease, it is not infectious. The contagion of small pox got into those vessels and did not get out of them; so much so that if a vessel came to me one season having small pox, whenever she arrived again with passengers, I was exceedingly careful to examine her, and I very many times found what I looked for. Of course when I discharged that vessel I doubled my exertions to have her more thoroughly cleansed, and in some instances we succeeded in getting the contagion out of the vessel. That the contagion of small pox will exist for years, I had early in my medical life a very striking example. Some years ago I was called on to attend a young man who was taken sick here. I saw him for a day or two, and he had all the symptoms of some eruptive fever; whether



it was going to be small pox or measles, or scarlet fever, I could not tell, but that there was an eruptive fever I had no doubt. I began to question him. I asked him if he ever had the small pox.

He said "No! I believe not."

"Had you ever the kine pock?" I inquired.

"I do not know."

"Have you been exposed to small pox lately?"

"No."

"We have small pox in New York," I said.

"I have only been here a week," he replied.

"Where are you from?"

"From Suffolk county."

"Where were you before?"

"I was at my work."

I thought I was mistaken, and gave it up. The next day his mother came down to take care of him, and I then saw a little eruption coming, and although it was not fully developed, it looked to me as if it was small pox.

"Where were you fourteen days ago?" inquired I of the patient.

He said: "I was at work repairing the roof of a house," naming the place which I have forgotten at this moment.

"Well, what did you do?"

"We tore off the old shingles, pulled down all the rafters, and took off the old roof. It was a very dirty roof; old rags and everything were stuck up in the rafters; the dust flew, and we had a terrible time of it."

I asked the mother if she knew anything of that building. She said that forty years ago it was a pest house, and all the people were taken there who had the small pox before vaccination was introduced. I have no doubt that some of these rags and clothes which he told about were infected with the contagion of small pox, and that young man got the small pox in that way; for it turned out a beautiful case of confluent small pox. The woman told me it was a pest house forty years before, and she herself was inoculated for small pox in that very house. I knew what a pest house was very well, for I was inoculated in a pest house.

Q. You are familiar with our local health laws and ordinances. What legislation would you recommend in addition to what we have already?

A. I have suggested that some law ought to be passed by which a perfect census of the city should be taken, and that small pox might in that way be eradicated; that some medical men should be appointed to go from house to house, not only to the habitations of the poor, but to the residences of the rich, and insist that every person that was not safe from the contagion of the small pox should be vaccinated. I would make it imperative on the citizen to be vaccinated; and for the poor I would make it as free as croton water—there should be no charge for it. And vaccination should be renewed, and medical men and nobody else can judge when that should be done. I am in the habit of inquiring among the families I visit, when they have been vaccinated, and urging upon them the necessity of attending to this matter. Only make them understand that if the kine pock can be made to go into their system, they are not safe from small pox, and they will consent to be vaccinated; for the one counteracts the other.

Q. After it has once been charged, do you consider the subject safe?

A. I consider the patient safe for life, although many think that vaccination will last for a few years, and then it wants to be renewed. It is only a difference of opinion. But all that is to be done is to charge the system with it.



Q. Aside from a law to secure the prevention of small pox, what other legislation would you suggest?

A. My answer in general to that is, remove the cause and the effect ceases. I gave a list of those things which strike me as being very conducive to the increase of death in our city over some others, among which were, overcrowded tenement houses, and the want of light, air and ventilation.

Q. Are the laws in existence not sufficient for the purpose?

A. No sir, I think not; because a man will get a lot 25 by 100 and will cover it with buildings. There is another cause which escaped my memory. We are subject to some diseases that they do not have in Europe. Now there is a disease that is the cause of a great deal of sickness and of a great deal of death. I speak of cholera infantum, a summer complaint among children. They hardly know of it in Europe; we have it in our city, and I am convinced that it is mainly caused by the atmosphere. I have frequently, when despairing of a child, cured them by a change of air,—sent them from the city into the country; and I think it very likely that a change from the country to the city might benefit some children. It was only the summer before last that a lady had a child very low indeed.

“Madam,” said I, “you must take this child into the country.”

She said, “Doctor, I can’t.”

“It will die if you do not,” I replied, and I urged upon her to go. She finally said that if I would go with them to Flushing, she would go. She carried the child on board the boat on a pillow, and before we got to Flushing it was better, so much so that she was satisfied to let me leave and go home by the night boat.

Q. Do you think there is any need of the medical staff being increased?

A. The medical staff is composed of the commissioners of health; there are three medical men in that board, but we have nothing to do with that; our business is more connected with Quarantine. If there is cholera, or yellow fever, or anything of that kind, we have not the power to regulate the sanitary inspection of the city; that matter only comes under our supervision as advisory agents. The city inspector is a member of the board of commissioners of health, and although the dispensary physicians might go from day to day through places where sickness prevails, they have no power to remedy anything they see; they are only advisory agents.

Q. Under that law don’t you think there is a sufficient medical staff?

A. That law applies in my opinion only to epidemics. We established two cholera hospitals, and appointed physicians and nurses, and carried through a pretty severe epidemic here, quietly, but then we did not establish visiting physicians to go through the wards.

Q. Then the commissioners of health would be competent if they should exert their power, to regulate all these remedies?

A. I do not know but they would; the board of health is not a medical board; it is a hydra-headed monster; it comprises both branches of the common council. I am directed to attend all their meetings, but I have not a vote there; and so is the resident health commissioner, but he has no vote there. I have been heard and am frequently called upon in the meetings of the board of health. But everything relating to the health of the city ought to be strictly under medical supervision. You would not get a carpenter to build a steam boiler! A man must understand the nature of disease in order to treat it successfully.

Q. Do you think the board of health could be rendered more efficient if it were composed of fewer members and was differently organized?

A. Yes, I think it would be much more efficient if it was reduced in its numbers.



Q. What would you suggest as being a proper organization?

A. I think the Brooklyn plan is much better than ours. They appoint a certain number of members of the common council, as a board of health, in connection with the medical officers of the board. I think it is well to have some laymen in the board of health. I do not think it desirable that the board of health should be composed altogether of medical officers, although there should be a large proportion of them in it. I think the district health wardens ought to be medical men; they could do a great deal, and it is their duty to go from house to house and examine their condition.

Q. Would it be well to have them as an advisory body to the board of health?

A. If the board of health was not a medical board then it would be well to have them as an advisory body.

Q. With regard to the duties of the present commissioners of health, I believe there are two physicians in that board. Would their present duties give them leisure to attend to the sanitary regulations of the city in case they should have its sub-medical officers under their control?

A. It would be better to have the head of a bureau a medical man.

Q. Could not the whole system be efficiently carried out by an appointment of health subordinates under a board of health?

A. Yes sir; but you must give them more authority than they have under the present law.

Mr. ELY—It occurs to me that they have very full authority upon all points. It seems to me that the difficulty arises more from a want of efficiency in the execution than a defect in the laws.

Dr. ROCKWELL—Perhaps it is because the commissioners of health have misunderstood their duties; they have been more of a board of appeal from the decisions of the health officer than anything else.

Mr. ELY—I presume the health commissioners have considerable leisure; they are not actively employed in their local duties.

Dr. ROCKWELL—There is a little interregnum now, but during the summer we have been busy enough. I have taken legal advice and I find I have no authority to take any man out of his house who has small pox. I could put him in quarantine and confine him, but I never felt I had the power invested in me to vaccinate a child contrary to the parents' wishes. I have been where there was small pox and begged parents to let me vaccinate their children, but they would not, although I offered to do it free of cost.

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#### TESTIMONY OF DR. JAMES R. WOOD.

Dr. JAMES R. WOOD, Surgeon to the Bellevue Hospital, testified as follows:

This is a subject that every New Yorker, and especially every New York doctor, is deeply interested in; and in brief, I am sorry that I am compelled to say that statistics would press me to say that the health of this city is inferior to other large cities both in Europe and in this country. I have learned that statistics have been presented to you, and of course it is not necessary to go over it again, for I would merely recapitulate what has already been said.

Q. Do you think this excessive mortality arises from the insalubrity of our climate or from the peculiarity of our location?

A. That would bring me to the second question. There are a great many causes for this apparent want of salubrity of our climate, independent of the locality of the city.



Q. Do you think New York is capable of being as healthy a city as any other?

A. The natural situation and location of the Island of Manhattan is more advantageous to the sanitary condition of a city than any city in the world. That is my opinion; and I was born here, and have grown up to see it, as I have said, to be one of the most unhealthy; but causes can be adduced to show why this is so. The centre of the city of New York, which would embrace perhaps the fifteenth and eighteenth wards, at least a good portion of the eighteenth ward, I think, is as healthy as any of our surrounding country localities. But you take the periphery of the city, then you find disease and the causes of disease, which compels me to answer as I have. We have, as we all know who live here, what may be called human pack houses, where all the essentials of health are absent. We know that light and air are essential to the health of animals as well as vegetables. Vegetables will fade and die without it. And if you will take the trouble to visit the tenant houses, which I have called pack houses, you will find that they have neither sufficient light or air to prevent the inhabitants from suffering from diseases, as they do. The mortality is principally among children, which makes the disparagement we have referred to. Strike out the great mortality of children and then we can present a better bill of health than any city in the world. There is a total want of attention here in regard to the sanitary condition of the city. There are no regular officers, who by nature or by education are competent to carry out the sanitary police of the city. This may be saying a good deal, but I think it is a matter which can be proven beyond all controversy and all doubt. So much for the internal causes which cause this terrible mortality of our city.

Then there are external causes—the importation of disease. We know that we have what it called a Quarantine, which, in my judgment, is nothing more than a place where disease and contagion is concentrated, which is constantly being let loose upon this city. I have been conversant with Quarantine for a good many years—in fact ever since I have been in the medical profession, and that is now twenty years. I have seen contagious diseases there. I have endeavored to make myself acquainted with them, and pretty much all the small pox that we have in this city can be traced to Quarantine. It is an imported disease; it is brought here every year, and it is not only brought to this city, but is carried through the country on the line of railroads, and the cases all come from what is called Quarantine. It is so with other pestilential diseases; it is so with yellow fever. Two years ago nothing but Providence saved this city from visitation. The time that the vessels were along the shore on the Long Island side of the river, when eighty of the best citizens lost their lives at Fort Hamilton; there was yellow fever in this city along the East river; between the point of the hook and Roosevelt street, there were, perhaps, to keep within bounds, thirty deaths from yellow fever. When I was in consultation with Dr. Gray in a house, I saw three cases, and they all died; two doors below that another, and a door above another. John White, a ship chandler, who is the principal man in our Hydraulic Dock company had it; I treated him for it; his clerk died with it, and his neighbor lost two of his men. I could go through that section of the city and show you that yellow fever did prevail here. It was hushed up; it was necessary that it should be, because an epidemic of yellow fever in this city is equal to the destruction of two-thirds of our mercantile community; there is no doubt about it, but it is difficult to make the mercantile part of our community realize this, and they never will until they are ruined by a visitation of this pestilential disease. Other diseases besides small pox and yellow fever are brought



here. We are indebted to the emigrant for our typhus typhoid fever, which has destroyed more of my profession than any other disease. And this has been brought to us from our Quarantine. These are facts which are matter of history.

Q. Do you think that arises from inefficiency on the part of Quarantine officers?

A. I do, sir. I think the locality of Quarantine is a *most excellent one for introducing pestilence amongst us*. It is no Quarantine at all. Every gentleman who has been in the habit of going down on the Staten Island boat, must have frequently seen patients with small pox on board. I have, and I have no doubt other gentlemen have.

Q. You think it should be removed?

A. That is my opinion.

Q. What point would you suggest?

A. I think that Sandy Hook is the place above all others for it; and if it was not for the State pride of New Jersey, you would get it. My opinion is, where there is a ferry, where there is a telegraph to carry disease—as the ferries are from Staten Island—that you will continue to have small pox, that you will have other pestilential diseases, and by and by we shall have what was witnessed here at the beginning of this century and as late as 1822—an epidemic of yellow fever; and once get it here, as I said before, two-thirds of our merchants will become bankrupt. There is no doubt about it.

Again as to the prevention and the remedy. The matter of sanitary regulations and a medical police has been reduced, I may say, to a science. The best minds and the best men of the world have been interested in it. I do not like to speak of officials; I do not wish to say one word of the powers that be or have been; but it must be evident to every intelligent man, that a man, because of his friendship to or for the powers that be, who never saw a case of pestilential disease, is not the man to rid the city of it. A man that is a baker by profession, or a stevedore, or a shoemaker, is not the man to build you a house; he is not the man to direct what should be called, perhaps, the domestic sewerage of the city,—that is, the soil sewerage of the city, which is a subject that should be looked to, in my opinion, at once. The sewerage is of great importance. The only regret that I have is, that we have not great sewers running from the North to the East rivers, that our city might be washed at every tide. And if our old Dutch ancestors had allowed Canal street to be extended through the Five Points, through what was called the cholic, and then down Roosevelt street, it would have added very much, in my judgment, to the health of the city; and I am not sure but that thing will eventually be effected, because the subject of the public health is being reduced to a science. Laymen, men who now merely look to the dollars and cents, will begin to look to their lives, and those of their children, by and by. The sewerage in France, and the sanitary police, are regarded by government as a very important subject. It is composed of professional men and laymen, and as my friend Dr. Rockwell said, he thought they should be united. I think that they ought to be. There they have a medical police or a health commission, and they have engineers to engineer for them; and a man that was not acquainted with engineering would know but little about the soil sewerage that extends from house to house. I think that it would satisfy the politicians who have these things in charge, and rule and govern them, if there was perhaps an admixture of the two; that all parties would be satisfied, because here is the great trouble, as Jefferson said, these “ulcers in the body politic;” for the politician has got to be satisfied at the expense of the life of his neighbor. This is so, and we can’t get over it. Then I



would say, give us an intelligent medical bureau—give us laymen to carry out the indications originated from that bureau, and in my opinion in a very short time, instead of being compelled, as we are all compelled to say, that this is the most unhealthy city in the Union or in the world, that it is the most healthy, which it can be made by proper sanitary regulations. The statement made by Dr. Rockwell in reference to small pox, is worthy of your attention. I do not remember now, but I think the first six months of the year there was between four and five hundred deaths from small pox—a disease that can be made extinct by proper sanitary regulations. There is no doubt about that fact at all. It is a disease that is imported, and you can trace it, as I have traced it, if you will take the trouble, from Quarantine to this city, and so through the country; all along the line of our public highways you will find that disease. It comes from the concentration of contagion at Quarantine. You, Senators, will go down there and dine within a stone's throw of twenty cases or more of small pox, and perhaps they will brush against your coat as you go out of the gate. I do not know but the gentlemen who hold these sanitary offices are as good as you can get under the circumstances, and that they perform their duties as well as others have done; but it is a medico-political office; it is an office that the politician is as much interested in, if not more, than the profession. I speak knowingly, and have seen and know for myself about these things. I know that it is an office where money is easily made, and that it is easily gotten rid of by the officers who hold the place. Very few men go out of that place rich, although they make more money than the President of the United States would make during his whole term of service. They make the money, but the lion's half goes to the politician; and as long as men are placed there under the direction of politicians, instead of the medical profession, so long will these grievances be complained of.

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#### TESTIMONY OF DR. H. D. BULKLEY.

Dr. H. D. Bulkley, physician to the New York hospital, presented the following statement;

*Committee on the sanitary condition of the City of New York:*

Gents—In reply to the several queries addressed to me on the subject referred to you by the Senate, I beg leave to say:

I. That statistics show that the mortality of New York is greater than that of Philadelphia, Boston, Baltimore, Cincinnati and Providence, and also greater than that of London and Liverpool, and some other European cities.

II. As to the causes of this mortality, I think that the subject should be considered under the two separate heads of *infant* and *adult* mortality, as there are special causes influencing the former which do not affect the latter; while there are certain general causes which affect both. The propriety of such a study of the subject is shown by the fact that the mortality under five years of age constitutes about one-half of the whole number of deaths; and it is a startling fact that of this mortality that classed under the head of "still-born" constitutes about one-tenth.

Among the *general* causes of infant mortality, acting *indirectly*, may be mentioned, 1. Impaired health of mothers, which may arise from causes acting either before and during gestation, such as syphilis, excesses of different kinds, &c., and also from causes acting during lactation, such as improper and sometimes insufficient food, overwatching, want of pure air, depression, mental causes, &c., &c.



2. Those acting *directly*, such as improper food of children when weaned, or partially fed, want of pure air when at home, and inability to take fresh air out of doors, and neglect of vaccination.

Among the *special* causes stand prominent the abortions and miscarriages produced by professed abortionists and others for money, and also by mothers, who ought to know better, for the purpose of avoiding having large families.

Among the prominent causes which indirectly, as well as directly, increase *adult* mortality, and perhaps at the head of them, may be placed the use of intoxicating drinks, and especially of manufactured and drugged liquors. Under this head belongs also residences in badly ventilated and imperfectly lighted apartments, too frequently those from which both air and light are almost entirely excluded; also overworking of the laboring classes, and general neglect of laws of hygiene. Under the same head should also be mentioned neglect of vaccination, and especially of re-vaccination, which has saved so many lives in Europe, when thoroughly and systematically performed.

Among the means likely to diminish the excess of infant mortality, should naturally be classed all those means which tend to improve the physical and moral condition of the mothers, into the particulars of which it is not necessary to enter. Under this head should also be mentioned the establishment of hospitals for sick children, and nurseries for the care of infants whose mothers depend upon their daily labor for support; and also thorough (and perhaps compulsory) vaccination of all children at a suitable age, by competent persons.

The number of "still-born" deaths would probably be diminished by,

1. The establishment of a foundling hospital, where children would in many cases be sent who are now destroyed, either prematurely or soon after birth.
2. By having more lying-in-hospitals, accessible to all conditions of women.
3. By the rigid enforcement of laws against producing abortions.
4. By enlightening (if possible,) the consciences of the intelligent and educated class of society, on the subject of the crimes committed when abortion is produced, even at the earliest period after conception, and perhaps, we might add, by promoting early marriages, and encouraging habits of economy, to remove the temptation to destroy offspring when illegitimate, or because an increase of family would tax the purse too much.

The answer to the third query, as to the suggestion of "remedies for existing evils in connection with the public health" embraces so extensive a field in all its branches and ramifications that I will do no more than allude to the more prominent ones, which occur to the minds of all who have directed the least attention to the subject, and most of which have probably been brought before the committee by those who have already expressed their views in the matter. I will mention some of them without any attempt to classify them.

Under this head belong improvements in the mode of building and arranging tenements for the poorer classes of society, with reference to ventilation and light, and abundant supply of water, and enforcement of sanitary laws in them by a proper and special police, and especially the prohibition of cellars, and dark and damp basements as places of residence. Also, a more careful inspection of soil pipes in houses, and also of out-buildings and cess-pools at the residences of the better as well as of the poorer classes; also having the garbage boxes in front of tenements and other houses more frequently emptied and kept more cleanly.

As having an important bearing upon this branch of the subject I would also mention the use of general means for improving the physical condition of the poor, by providing proper employment for them, and keeping them from



being overworked, and from working at improper hours ; also providing them with means of bathing, &c., and also providing means for manly sports and exercises, and encouraging them to engage in them, as on days or parts of days appropriated to this purpose, or during the interval between the hours of work, as in large manufacturing establishments, &c. ; also, providing cheap and accessible means of relaxation and amusement, the beneficial effects of which are felt in different ways.

The proper inspection of different kinds of food, especially that furnished to the poorer classes, who suffer from this cause both from ignorance and the want of means to purchase that of a healthy quality. This refers not only to diseased meat and impure milk, but to vegetables and fruit in the summer season, and also to liquors, both malt and distilled, the impure quality of which has doubtless much to do with the health of the lower and middling classes of society.

As having an important bearing upon a large and susceptible class of the population, the children and youth of our city, should be mentioned more attention to the proper ventilation of buildings used for purposes of education, and as not less important, the diminution of the amount of time devoted to study, by allowing longer intervals for relaxation and fresh air.

It is not necessary to dwell on the influence upon the health of the community at large of a more thorough and scientific attention to sewerage, and to paving of the streets, and to keeping the pavements in better order, so that there shall be less liability to deposits of filth and water in places where the pavements are imperfect ; nor upon the importance of keeping the streets cleaner during the warmer seasons of the year, when the exhalations from them are found to be so offensive to the smell, as well as injurious to health.

For the purpose of securing the proper carrying out of these and other remedial measures, the need of which is so deeply felt, and secure a measure of the first importance, is the establishment of a thoroughly organized and efficient sanitary police, for the full and effectual working of which, it is necessary that it should be made to consist entirely of medical men.

Nor would I leave unnoticed in this connection the importance of a more rigid enforcement of quarantine laws, into the details of which it is not necessary to enter.

The last among the means for diminishing the mortality of our city, of which I will speak, and one of great importance in its bearing upon it, is a more thorough attention to both vaccination and re-vaccination, under competent medical supervision, even making it compulsory, if necessary, as in England, although this is not a measure which I am now prepared to advocate. The urgent necessity of doing this is shown by the fact that for the ten years, from 1848 to 1857, inclusive, the number of deaths by small-pox and varioloid in this city has averaged over four hundred and fifty (450) a year, and hence, according to the average mortality of small-pox, the total number of cases of that loathsome disease has probably equalled, if not exceeded, three thousand (3,000) a year for the last ten years. Nor have these cases been confined to our hospitals and other public institutions for the sick ; for I find that in not one of the years mentioned has the number of deaths in the small-pox hospital exceeded 40 in a year ; and in two of them, it only reached 20 and 22, respectively. An interesting feature in the statistics of this district is that more than one-half of its victims die before the age of five years, showing very conclusively that the mortality may be much diminished by proper means. Indeed, we do not think that we claim too much when we say that thorough and complete vaccination and re-vaccination will almost, if not entirely banish this from the list of causes of death among us. The result of such a system of vaccination is



shown by the fact that in the city of Boston but one case of death by small-pox occurred during the past year. If the children under five years of age, who contribute more than half of the mortality by small-pox, had been properly vaccinated, at the proper time, statistics of death after vaccination show that nearly the whole would have been saved; and if tested and re-protected by re-vaccination, the mortality would have been reduced to the smallest fraction.

But I will dwell no farther on this subject than to introduce some statistics of the results of re-vaccination, with which all may not be familiar, and which establish beyond any doubt the beneficial effects of re-vaccination; and with that I will conclude my communication.

In Wirtemberg, but one case of variola occurred in five years, among 14,384 re-vaccinated soldiers, and three only among 26,864 re-vaccinated civilians. Not a single case of small-pox occurred among those who had been re-vaccinated in the Prussian army in 1836, 1837 and 1838; and but three deaths by it in all the military hospitals of Prussia in 1841.

In 1834, two deaths are recorded of those who had been re-vaccinated with effect in the Prussian army, and one in 1843. In 1849, but one case was fatal, and this was in a recruit, vaccinated when a child, and who had not yet been re-vaccinated.

In the Danish army, of those who were successfully re-vaccinated in 1838, not one was attacked with small-pox.

In a severe epidemic of small-pox at Liege, in Belgium, none of those who underwent re-vaccination took the disease.

To these might be added, if necessary, many other testimonials of a similar character, to prove the efficiency of re-vaccination in the prevention of deaths by small-pox.

Respectfully,

Your obedient servant,

H. D. BULKLEY, M. D.,

*Physician New York Hospital.*

NEW YORK, Dec., 1858.

Mr. ELY—How often do you think re-vaccination should occur?

Dr. BULKLEY—In my private practice I advise my patients to be re-vaccinated as they approach the age of ten years; and then at intervals of from five to ten years. I think the greatest susceptibility is from ten to thirty—after that the susceptibility ceases; but when young the susceptibility is greater, and the changes which are taking place in the system calculated to eliminate any thing of that kind, are more active.

I think the city should be more effectually guarded against the importation of disease by Quarantine. Persons are undoubtedly ready to escape from Quarantine and spread small pox, more especially, and also yellow fever to a certain extent. That is a mooted point among gentlemen, with regard to yellow fever, at the same time I have no doubt that there is a screw loose somewhere down there.

Dr. McNULTY said—The city authorities did enforce vaccination at two periods with very happy effects. One year there were upwards of 5,000 vaccinated, and another year about the same number. That step had the happy effect to stay the epidemic of small pox at each period.

Q. It was not a permanent law?

A. No, sir; it was only enacted merely for the exigency.



FRIDAY, October 29, 1858.

## TESTIMONY OF DR. D. B. REID.\*

In answer to the first question, Dr. Reid said:

From my own observation, I think that the health of the city of New York is inferior in many respects, to that in different European cities, but I am not prepared at present to give such information in reference to its comparative health, as the committee desires. I do not consider the ordinary tables of mortality, however valuable and important, a sufficient guide for the full elucidation and right preservation of the public health in different cities. The remote and predisposary causes of disease, whose influence is easily traced in many communities, must be taken into consideration for this purpose, as well as the special causes that produce death.

A more extended comparison of the nature of life and the causes of death is desirable, both for legislation and recommendation. No city, perhaps, presents a proper standard of reference in modern times. It can be demonstrated that the average duration of human life is so largely and unnecessarily abridged as to interfere materially with the right direction and disposition of the time and periods usually allotted to the principal objects of life. A tendency to overtax and strain the nervous system with an imperfect development of the muscular system, and many consequences flowing from the same causes, characterizes the present day.

It is equally true that an erroneous interpretation of the noted passage in the XC.th psalm, as to three score and ten years, has produced incalculable injury in reference to the question of public health, clothing a complaint with the authority of an edict alike at variance with the fact and with the most able biblical criticism.

It is one of the highest duties of the medical profession to sift and elaborate the truth as to the right duration of life, to raise a proper standard of public health, and to record the loss in property and life to which the public interest is subjected from remediable causes, affecting the whole or large masses of the population.

I have seen no city, either in America or Europe, where a profound conviction is not entertained by those who have most assiduously studied this subject, that if the knowledge and experience of the past shall be combined with the resources of science in the present times, public health will annually assume an improved footing that will manifest its influences on all classes of the population.

In answer to the second question, I would say that I have seen many causes that interfere with the public health in this city; they differ from those I have observed in other cities, principally in the variety of their combinations, in the degree to which each acts, and in the extent to which the severity of their operation is influenced by the peculiarity of the climate.

Q. Is it your judgment that in regard to the sanitary regulations in London, for instance, we are very much deficient in similar regulations here; and if so, what are they?

A. I think there is a great deficiency in respect to the sanitary police,

\* Dr. D. B. Reid is Fellow of the Royal Society of Edinburgh, and of the Royal College of physicians in that city, and acted as a member of the Health of Towns Commission in England and Wales. He visits the United States with letters from His Excellency, the President of the U. S., when ambassador in London, and from Lord Clarendon, and is here pursuing enquiries in respect to agriculture, architecture, and the general condition of the people. He is an advocate of international arrangements being adopted by all maritime nations in respect to quarantine, and of the construction of hospitals on an improved plan, for the sailors of all nations.



and the cleansing of the city of New York, compared with any European city of which I have any information.

Q. We are told that our manner of building houses for the poor is increasing disease among them. In London, have they made much improvement in the cleansing of such habitations?

A. There is greater cleanliness in some districts, combined with very improved modes of building such houses; but in others there are still great complaints in respect to the habitations of the poor in London. Immense efforts have been made to organize arrangements throughout all the different districts in London, and in unison with all the public authorities; and these, wherever they are taking effect, are producing the most important results. The greatest evil in London is the condition of the river Thames, which is gradually becoming worse and worse in proportion as drainage and cleansing, and many other improvements are increased; so that now at times they are compelled to resort to extreme measures, even for the temporary purification of the river by means of chemicals, more especially lime, which I had used years ago in illustrating its influence in purifying Thames water.

Q. You regard, I suppose, ventilation and light and cleanliness as essentially required in the sanitary management of a city?

A. Certainly; I do not think it is possible to attribute too much importance to them; but opinions as to the degree and extent to which they should enter into sanitary regulations are so various among different authorities and in different places that I despair of seeing these objects sufficiently sustained in any city, until there is a more extended system of education in elementary schools upon the subject of air and other circumstances affecting health, and means adopted also for giving some explanation on these subjects to masses of the population that take no interest in them at present.

Q. Are you prepared to suggest remedies for whatever appears to you to be existing evils?

A. I am prepared to suggest a number of remedies, many of which I have brought before different boards and authorities in the city of New York.

Q. Will you state, in your own manner, sir, each, under its appropriate head?

A. The first point that I would beg to submit, is, the immense importance of endeavoring to find an economical outlet for the materials that arise in the process of cleansing the city. In all great cities in Europe with which I am acquainted, the greatest possible progress has been made in this department; so that in special districts where they have paid hundreds of pounds a year for the removal of refuse matter, they now receive thousands from its sale for agricultural purposes. I think there is less local agriculture supplied and nourished by manure from the city of New York than almost any other city I have ever seen; while at the same time it appears to me that there is often in the price of some articles of food and diet an expense,—in the cost of some vegetables and fruit, for instance,—which would be materially diminished were that manure properly applied. I do think that if one or two blocks that require cleansing were particularly examined, the materials taken from them weighed and measured, the cost of collection noted, and the results of its application as a manure in special departments of agriculture, carefully tested under proper authority, the city would soon know practically the immense loss to which it is at present subjected. I do not know that in any city, I have ever seen such large quantities of *debris*, animal and vegetable, as well as other refuse, accumulated in the streets, and flying about in the shape of dust at certain periods of the year,



as in New York; and I know that in many cities there is entertained a wholesome fear of contracting disease from the circulation of dust. That dust may be loaded with the principles and seeds of disease from houses, and from diseased animals driven through the streets, and be productive of much illness, the cause of which may be unknown, or difficult to trace in individual cases.

Another great cause of disease appears to me to be connected with the cess-pools, where a proper system of drainage has not been carried out; and numerous are the cases where this may be observed, while partial attempts at drainage, without a proper supply of water and valves or drain traps, only aggravates the evil by opening a communication with a drain that can only be regarded as an elongated cess-pool. Here the interference of the legislature is imperiously demanded in correcting evils connected with the system of building, and not at present under proper contract. In this city, in many cases, some of the blocks which I have personally examined, though not often absolutely closed by high buildings on every side, have frequently in the interior, the most imperfect circulation of air; and where there are at the same time many cess-pools, all collections of putrid matter ferments, and deleterious emanations are produced, which are necessarily the cause of much disease.

Q. Privy vaults, you mean?

A. Yes sir. I do not know any question more important in large cities to the health of those whose houses have not the convenience of a water closet, than a right arrangement of these cess-pools. In many places in different parts of Europe, I have found that wherever they can introduce what is called by the rather incongruous title, "dry drainage," this relieves the locality of the great evils that are prone to arise from materials in a state of putrefaction.

Q. What do you understand by dry drainage?

A. I was about to explain it. This system converts all such liquid and putrifying refuse at once into a dry material which is inodorous, and can be carried away daily, weekly or monthly, and be applied to agricultural purposes; and as a general principle, in all places where water is not easily supplied or removed, in the suburbs of many cities, and especially in country places, where rivers are small, it becomes still more important. It will be observed that such privies can be so arranged as to be above ground and constructed in such a manner that charcoal, solid absorbents, and other applications, convert the contents into a dry mass that can be removed without difficulty, without offense, without the waste of manure, and without the destruction of health, so infinitely important, that necessarily attends a liquid fomenting mass in the vicinity of many habitations. I do not say that that system will compete in the higher classes of habitations, with the system of water closets, in ordinary use; but wherever we have no such closet, I cannot mention anything more important than the adoption of this other arrangement. It will be observed that such an arrangement can be very easily introduced into numerous manufacturing establishments, where, at the the same time, the privy vault can be subjected to a downward ventilation; so that it is as inoffensive as any other system that can be adopted for this purpose.

Where many lodging houses or habitations are congregated together, a system of ventilation can be maintained there likewise, that can be easily introduced. But moral remedies as well as physical must be brought into action to effect much in many places, so great are the prejudices to be overcome in introducing improvements.

By throwing every kind of light on the subject with suitable illustrations and explanations, legislation is greatly facilitated, and the road paved for



numerous voluntary improvements which it would be difficult or impossible to enforce by any enactments. This principle guided many of the Parliamentary reports and papers drawn up for sanitary purposes in England, among which I may refer more especially to the report, made by the Health of Towns commission, in 1845, and the recommendations at the close of this evidence.

Then, in the next place, there is a great want connected with all the habitations almost, that are not of the highest class, in this city, and that is what is called a "dust bin." Much refuse is too often kept in the basement, in many houses; they have no right places to deposit their dust and ashes, to which a cart can enter to carry them away. In the building of blocks they could be so arranged that a small cart could approach and take all solid refuse directly away. This constitutes a great improvement. In some places in Europe, I have seen houses so constructed that all the ashes from every floor are thrown down an aperture or flue near the stairs. It would give the people much more trouble to take them down stairs, than to put them in this flue, from which they pass directly to the right receptacle. By introducing physical obstacles, and making it harder for them to do things the wrong way than the right way, you hit the nail upon the head more effectually than in any other way, in meeting difficulties from carelessness or want of proper habits. I have seen flues from the top to the bottom of a house arranged in that way. When the proper officer comes round to remove these substances, he has only to lift a valve and the contents come out at once, and may be pushed or shoveled on the cart with little labor. When the most improved construction is adopted, the whole of these arrangements are rather to be considered as objects that are daily receiving increased attention, than as matters that have been carried out to the extent desirable in any European city. The moment you give the people certain facilities and advantages which they can appreciate, regulations can be enforced which it might otherwise be useless to enact.

There is another question that now attracts very considerable attention in many of the large cities I have seen, and that is providing something in the shape of public conveniences for the people throughout the city at certain stations. There is scarcely anything in this city, except at the City Hall park, which is of itself a nuisance. The want of these often lays the seeds of disease, and becomes subsequently a cause of death. I allude to the retention of urine. In London, in particular, that subject has received great attention of late. The public authorities are buying up or appropriating places for such purposes. Even private speculation has stepped in, more especially at Paris, where ordinary conveniences have long been remunerative to the proprietors. Few circumstances tend more to induce or sustain indifference and neglect in relation to cleanliness and disease, than the want of adequate attention to such provisions, both in crowded public districts and in individual habitations.

In London there are urineries in many streets, and some public buildings, provided with abundance of such conveniences. The best of them are constructed of slate, with glass ceilings, so that they are entirely exposed to light above. These places are found in the most crowded thoroughfares in some streets. Then, around all the courts of Westminster, they have the same conveniences, and there is no reason why such places of retreat should not be erected wherever they may be deemed essential.

The system of heating adopted generally, and its relation to the atmosphere of New York, appear to me to have a very great effect upon the health of numbers in this city. It has indeed occurred to me that a pallid, blanched and peculiar complexion among numbers of the population is dependent on this cause. When I first came here I thought it was peculiar



to the district, but it can be traced to the effect of warm, dry and vitiated air. Imperfect ventilation is a question that affects all countries, whatever may be the local peculiarities of individual climates, and the improvements apparent in many stoves and heaters, as well as the more systematic introduction of ventilation, hot water and steam apparatus, will reduce evils arising from this source. It will be found in every town in Europe, and everywhere they are looking for improvements—as they appear to be in this city. The principal effect has arisen from the fact that in later years there has been a great degree of perfection attained in the fitting of windows and doors, while, on the other hand, there has been a new system of heating introduced, and the consumption of large quantities of gas. These three produce a combined effect that was unknown in former times. A great deal might be done to improve the construction of buildings, if there were some model rooms shown in which the most important and desirable ends were clearly and distinctly pointed out. It will be observed that the greatest improvement in this respect lies in the ventilation. Now a great mass of houses are built without complete arrangements having previously been made for ventilation, warming, gas, &c., so that where gas or other improvements are needed, people are compelled to be put to great expense to have them introduced, or to submit to the manifest defects; whereas, if a system of education were introduced—I mean not only among the younger class of the community for the benefit of posterity and the rising generation, but a system of education for glaziers, decorators, plumbers and all others who have anything to do with the finishing of houses, in order to make them understand the relation of air to individual apartments, many improvements would advance with much greater simplicity and effect than they do at present. Everywhere,—at London, at Berlin, St. Petersburg and Paris, where I have had opportunities of observing the progress of art in building, I have seen the same fault, and the extent to which this evil arises is so great that I am prepared to place it amongst the most severe and extended causes of disease known. I believe that in many cases people suffer less injury from colds and disease arising from any exposure out of doors than from the amount of local and partial exposure to which they are subjected between a heated and cold room within their own habitations.

There is another point that is daily becoming more and more important. While the preventive services of the medical profession should be brought far more extensively into the field of sanitary improvement, and encouraged and supported, they should be more intimately combined and associated with architectural, agricultural, and other departments of practical science; for unless the architect builds in accordance with the suggestions of the physician, and according to the principles of health, and unless the agricultural department be brought into play so as to pay the expenses of sanitary arrangements in cities, as well as to assist by vegetation in counteracting local evils, it is impossible to obtain by either party alone, those results that would flow from a more cordial sympathy and communication between the members of different professions.

Another circumstance that struck me very much in this city, is the extreme rapidity with which tens of thousands of young men, as well as others of a maturer age, take their refreshments in the middle of the day. That is another element affecting health to a certain extent. I have seen no place, in no part of the world in which I have ever been, where meals are taken so rapidly, and exercise entered on so immediately afterwards, as in the city of New York. I do not think that is wholesome; or rather I should say—for the people are agreed that it is an unwholesome practice—that it is carried to an extent that very materially affects health, especially where a vitiated, over-heated, or an over-dry atmosphere prevails.



Another point that I have been very much struck with, is the small space that young persons at school, at this time of life, generally have for exercise. In many instances they would probably run and take other exercise to twice, thrice, ten times, or perhaps twenty times the extent that they do at present in this city, were they provided with better opportunities. If anything were done, either to increase the exercise at the school by a perfect system of gymnastics or training, or to render all squares or other large spaces more accessible for this purpose, it would have a most marked effect upon the chest and the health, strength and length of life of the rising generation. It is noticed that wherever there is much room for exercise, the result is to expand the chest and increase the respiratory area, while the whole circulation becomes more active; but where you have not deep breathing, such as people attain when there is room for running and walking, the results are not so beneficial. It is not enough to have a park where people may go occasionally in fine weather; the health and strength depends more on the daily food and exercise, than on any occasional influence.

Another peculiarity which has presented itself to me in a very marked manner in this city, is connected with the heat of summer. When rain falls in any quantity upon the ground, in ordinary circumstances it is absorbed or retained for vegetation, and cools the air for a very considerable period where it is not carried off by gravelly or rocky ground. In New York the immense surface of the pavement, and the peculiar aspect of the city in relation to the sun, subjects it to great solar radiation. The width of the streets, which is attended with such advantages for numerous purposes, necessarily however, brings one defect in this, that during summer it exposes the houses to a great deal of heat and local radiation; and while the wide streets are very desirable, it is questionable whether some extra provision should not be made for cooling these streets in summer, either by more planting and vegetation, or a more extended use of water on the pavements at particular times. In the construction of buildings, it would be easy to have one cooling room that would be available in every house, or series of habitations, and afford great relief at particular periods to numerous constitutions.

Q. The object of this committee is to confine its investigations more particularly to inquiries having a connection with proposed legislation, which can be strictly enforced, though we are very happy indeed to receive these suggestions, and would like to hear others from you.

Dr. REID.—I may mention that on the other side of the Atlantic, so far as I have had an opportunity of observing, the most important results have arisen in every district that I have been acquainted with, since the appointment of local medical authorities, who inspect the whole of the district to which they are appointed, and since they have had every assistance they might require from engineers, surveyors, architects, agriculturalists, wherever it was possible to improve or encourage the means that were available for sanitary purposes. Before the health of towns' commission in London was appointed, there were numerous cases where medical authorities had not the proper control, and in fact so curious was the state of public opinion at that time, that there were few medical men on the most important commissions for the improvement of health. But much can be done by the combined assistance of the agriculturist and mechanic, rendered to the medical authorities, and I do attach immense importance to their hearty co-operation with each other. When the physicians direct their combined labors, the results take a natural direction, and are most productive of benefit to the public.

Q. Have you been familiar with the sanitary condition of Paris?

A. I have to a certain extent. I reported for the late Louis Philippe,



when King of France, in reference to the *Tuilleries and Palais Royal*. I have known Paris at different times since 1825, but have not visited Paris for the last five years.

Q. You have not the statistics ?

A. No, sir, not recent statistics. I have a few facts connected with Paris that I could mention to you. In the first place, in many places in Paris, the whole atmosphere is often tainted with the condition of their cess-pools, but in this much improvement has been effected. Its position is the very reverse of New York, being surrounded in some respects by hills that are obstructions to natural ventilation in calm and sultry weather. I do not know of any city, notwithstanding all that has been done there, which would improve more by a thorough carrying out of the system of dry drainage to which I have referred.

Q. How is the sewerage in Paris ?

A. I remember that in 1843 it was in the most indifferent condition in many places that came under my notice in special inquiries, but I cannot undertake to give an account of the present condition of the sewerage in that city. At that period, in some buildings of the highest importance, neither the general system of cleansing nor the sewerage were such as to prevent local accumulations so largely charged with gasses that on striking a communication there would be enormous discharges ; but then, with all the advances that have been taking place in Paris recently, I consider that they were in the way of making great improvements in their sewerage.

One point that I have not seen carried into effect here, the ventilation of drains, is a matter of great importance in some cities. It is better to do without it where you can have them well cleansed and free from bad air ; but in other places where they are comparatively level, and where there is an accumulation of bad air that finds its way offensively into the houses and streets, the ventilation of drains is an important question.

Another point to which I would allude, is, that in many places in the suburbs of this city, there are collections of stagnant water, that often emit offensive gases. I mean on the unfinished ground in the vicinity of streets that have been recently graded. I think I have noticed a very considerable portion from time to time in different places where the granite rock forms a kind of large cup or bowl almost, and where I have seen it retained for months, in a state of decomposition. Drainage would be a remedy, but as the prospect of that does not seem very near, it would be very easy to place caustic lime in such places, till a more systematic remedy can be secured.

Q Do you think it essential for the preservation of the health of a large city that the management of its health department should be vested in medical men ?

A. I do have that conviction ; and I have been present at meetings where it has been very much discussed ; and though opposed at times, the principle has been eventually so manifest in its practical application, that it was found that all those who from local consideration had taken much interest and direction in sanitary meaasures, had either to become medical men themselves or to resort to the assistance of medical men ; and therefore there is no reason why those who have been trained to observe the causes of disease should not direct their department as much as the architect, the agriculturalist, the soldier, or any other professional men, in their individual callings or occupations.

Q. Should not the natural advantages of New York render it as healthy a city as any in the world ?

A. I certainly have that opinion, if these are conjoined with the construction of houses, and also the hours and times of business, and such other



questions as affect public health. When I was in Edinburgh, where I spent the first part of my life, I thought I had worked as hard as my professional brethren ; but when I was called to London, I found numbers there that labored to an extent that we should have rebelled against in Edinburgh ; and when I came to this city I found that the people here were as much beyond those of London, in point of hard work, as London was beyond Edinburgh ; and I certainly think the latter gained more in the enjoyment of life than it lost by the difference.

Q. Are you aware of any natural cause which should render New York an unhealthy city, or more so than any other city ?

A. I do not see any reason why New York should not take its place among the most healthy cities on the globe, if its natural capabilities be duly improved, and other remediable evils be properly corrected. It has a supply of water such as none of the most improving capitals in Europe can display, and many natural advantages for the direct removal of vitiated air, that neither London, Paris, Berlin nor St. Petersburg can command. Further, the older portions of European cities, such as London and Paris, have not yet recovered from the effects and example of the close aggregation of dwellings during the days of fortifications, and the habitations of the poorest classes have neither the space nor the circulation of air that can generally be recognized in the same class of habitations in New York. However much may have been done for their improvement in London, the great bulk of the habitations referred to are not yet in the condition in which they ought to be.

On the other hand, the geological formation of New York gives rise in the suburbs to various isolated sources of malaria, where sufficient drainage and vegetation has not hitherto been arranged, nor chemicals introduced to absorb or decompose materials producing deleterious emanations. The occasional intensity of the summer heat, the annual presence of mosquitoes, and the tendency in some places in the vicinity of fever and ague, all indicate circumstances that demand the most careful attention to a still more effective system of cleaning the city than is requisite where the temperature is more moderate.

In some districts near London, where the drainage of the land is imperfect, I have ascertained that from 120 to 130 men are usually employed where the work of only 100 men is wanted, in consequence of the frequent absence from illness.

The absence of that extensive system of docks which prevails in London and Liverpool, and isolates a large amount of traffic, refuse, and danger from disease, gives use in New York to a much more traffic in the streets than would otherwise ensue.

But none of these circumstances, nor even the condition of the streets in New York, appear to me sufficient to account for all the mortality. I have a conviction that other causes play a very considerable, though less obvious part in the final result. Nor is it possible to overlook the circumstance that large numbers of foreigners, transported to a very different soil, climate and diet from what they have been accustomed to, whatever advantages it may confer upon them, may require even more than a single generation to acclimate and accustom their constitutions to the land which they now inhabit, to avoid such causes as do not conduce to health, and to guard sufficiently against the effects of extreme exposure, either to heat or cold. Such causes, however, in no way lessen, but rather increase the importance of an improved sanitary condition of the city.

Further, in looking to the future of New York, its probable destiny as the nucleus of a greatly increased population, and its capabilities for those sanitary measures without which none of the larger aggregations of popula-



tion can sustain a lasting endurance, it is desirable not to overlook any symptoms of an evil that may, in the course of time, expand into gigantic proportions. Already, notwithstanding the magnitude of the waters that flow around it, there are distinct traces in the immediate shores of Manhattan Island, and in other places in its vicinity, that it is an object of public importance to enter on a system that shall reduce by every available means the amount of impurities conveyed to the waters on either side.

There are one or two points which occurred to me that might perhaps be worthy of investigation. For instance, I found an amount of vegetable matter, on many occasions, in the Croton water, that appeared objectionable, and if that could be removed it would improve its quality, should its origin not have been local or accidental. When a large quantity was evaporated it communicated a particular odor or smell of decayed organic matter. In point of water generally I have never seen anything to compare with the advantages here, particularly in connection with its supply to individual habitations. It is far beyond what they have in any large city I have ever known in the north of Europe.

Q. Is the residuum which you have mentioned as being in the Croton water, peculiar to the Croton water alone?

A. I could not say it is peculiar to Croton water compared with the waters in other cities; the Thames, in London, may contain a much larger quantity of animal and vegetable matter. But still, the Croton water gives to me a very sensibly different taste at those times to which I have alluded.

Q. How is it compared with the water in Philadelphia and Boston?

A. I could not undertake to say; I have not compared it with them sufficiently. The water has been always iced that I have taken in Philadelphia and Boston.

Dr. GRISOM observed:—It is well known that the Philadelphia water contains a very large quantity of residuum, especially in running streams of water, so that it really looks muddy in the glass, and it is not Croton water.

Dr. REID.—I take the liberty of alluding to this matter, because while I acknowledge the great value of the Croton water, and the arrangements connected with its supply, as all must do who are acquainted with what has been done here, it appears to me that it may be connected with the aggregation of moss or some other vegetable matter, in some particular channel or district, at particular periods of the year, that might be susceptible of removal or diminution. Whether that is the case I cannot tell; but a manifest improvement would be made in the Croton water by its removal.

Q. Will you proceed with whatever other suggestions you wish to make to the committee?

A. If physicians were more generally sustained in the preventive department of their labors, the profession would be enabled to do justice to this department of their labors, and the effect would be to prolong the life of the inhabitants.

Dr. GRISCOM—Does the appointment of a medical man as a sanitary policeman degrade him in any sense?

A. On the contrary, I should consider that in discharging the duties of such an office he is exercising the highest functions of the profession. If a medical man by any proper preventive system can stop many diseases where he formerly cured some, and had no proper opportunity of combatting others, he is contributing more essentially to the public service; and in so much as he contributes with greater energy and effect, by broader and more commanding measures in securing the public health, and in preventing



suffering, disease and death, so far his services must be placed on a higher footing. Further, to discharge such duties effectually, he requires a still more extensive range of knowledge than is usually cultivated by those engaged exclusively in ordinary professional practice.

There are in reality different departments of the profession so intimately blended and associated together, that every medical man in passing through the proper curriculum, must acquire information upon each; but just as there are a series of cases that belong to the surgical department, and another to the physician's department, so there are a series of cases that belong to the preventive department, which require as much skill and investigation as any other. Take for example the subject of quarantine, that has been attracting so much attention of late. I do not know of anything that would give so much relief to the public generally, as a minute and special inquiry into the history of contagion, and to the points that we really do and do not know on this subject, and as to the best means of prevention. I believe that in this city millions would be saved, were a series of regulations adopted by which ports of embarkation would be rendered the subject of as much attention as the port of arrival. And all those questions are necessarily involved in this preventive or general sanitary department of the medical service.

Dr. GRISCOM—You have no doubt at all that the spirit which animates the medical profession in this city, would justify a medical man in taking such an office as that of a health warden?

A. I cannot imagine anything more essential to the public service, or how it is possible to carry on the health department of the public service without it. The respectable physician must know his duties, and *all* his duties, according to the department he selects for practice, and if he is not acquainted, nor willing to seek to become acquainted with every question, he would neither be imbued with a proper knowledge on the subject, nor with the right spirit that ought to animate his professional calling.

WEDNESDAY, *November 3, 1858.*

Q. Doctor Reid, we will ask you in addition to the other remedies proposed by you for the existing evils, whether you have any other statements to make, and especially whether you have turned your attention to the fact of its being necessary to control by legislation, the mode of erecting buildings particularly for the benefit of the poor?

Dr. REID.—That is one of the most important circumstances affecting the health of large cities, with which I am acquainted; a proper building act, that shall not too much interfere with the privileges of individuals, and at the same time prevent them being a source of injury and annoyance to their neighbors. It will be seen from the present state of architecture, that unless all the parties contributing to the design or to the execution of the work in all the various branches that constitute a building, shall play into each others' hands, and co-operate effectually together, it is impossible to place the structure on the desirable footing that will be accompanied with all the advantages of which modern arrangements are susceptible. Many who think of ventilation and imagine a mere opening or shutting of a window is sufficient, are apt to dismiss the subject without any further consideration. But when the extent is better known, to which drains and stagnant refuse; the imperfect discharge of products of combustion, or other sources of bad air, produce disease, it will be impossible to contemplate for a moment a crowded building in any large city, without seeing how important it is that the thickness of walls, and soundness of walls and flues; the arrangements for cleaning; the carrying on of certain trades and occupations; the control of vapors, and the construction of privies and cess-pools should all be



brought under official regulations. I have the strongest conviction that a building act might be constructed on these principles, that would not be oppressive to individuals, and that would be productive of the greatest advantage to the public health.

Q. It has been stated that the use of cellars for residences, which are exposed to a humid atmosphere, and where there is a great want of light and air, are injurious. What is your opinion upon that subject? Many of our tenement houses are so constructed that the cellars are all below the ground; families occupy them, who scarcely ever see the light of the sun, and the apartments are crowded, and dark, and damp, and unhealthy. What is your opinion upon that subject?

A. I certainly entertain the conviction that all cellar dwellings, and all places whatsoever, to which light cannot freely penetrate, as well as air, are not good for the preservation of health; at the same time I have seen many districts where cellar dwellings of a certain character have absolutely been more free from disease than the tenements above them. Where a cellar dwelling has a door or window, capable of opening close upon the ceiling, it will in general be found that the free exit of bad air from the ceiling counteracts many of the disadvantages, while in superincumbent flats in the same tenement, disease will often be observed from the crowded and too vitiated air that has escaped from the apartments and cellars below. That case supposes the cellar to be in itself dry, clean, and free from moisture; where this is not the case, then I have only to say that my opinion in respect to cellar dwellings is in unison with the general opinion on this subject, that they are very unfavorable to health.

Q. The whole question then resolves itself into this: The absolute necessity of air, and comparatively, the absolute necessity of light?

A. These are the principal points; but I should like to add another item in respect to cellar dwellings in New York. If the temperature be examined in a series of rooms from the top to the cellar of a house in New York, during the summer, it will be observed that the extremes are very great, and they amount sometimes to twenty or thirty, or more degrees. I would be in favor of a more extended use of the cellar, in cases where it can be kept perfectly dry and comfortable in summer, as a retreat for extreme weather, when it will be found to afford great relief. Further, there are cases where you may easily bring down air from above into the cellar, and cause it to be discharged when it is vitiated; but such cases are the exception, not the rule, in viewing the ordinary condition of cellar habitations. There is a very special evil also, which cellars in many districts are very much subject to, independent of moisture and vitiated air, produced within them by the accumulation of refuse, and other causes, and that is that in cold, calm weather, a supply of vitiated air, loaded with moisture, offensive effluvia, and impurities even from the drains on the surface of the street, is apt at a low temperature to flood such dwellings with impure air. Wherever it is practicable, the cellar ought to be made absolutely air tight below, with proper cement, so as to exclude entirely all infiltration of moisture, and the drainage and external cleansing, still more particularly attended to than under ordinary circumstances, so as to preserve the pure external atmosphere. Cellar stables, discharging largely offensive air, are very common in New York, and should be placed under specific regulations as to ventilation.

In the introduction of a new building act, it is often of very great importance not to interfere unnecessarily with particular branches of trade and manufacture; and if it be recollected that there are no fumes or effluvia from animal or vegetable matter, or chemicals giving offensive vapors that cannot be decomposed, condensed, or otherwise rendered abso-



lutely innoxious if the ventilation be specially adapted for that purpose, it will greatly facilitate all local difficulties if manufacturers take the opportunity of introducing such means of correcting noxious emanations.

Dr. Reid concluded with the following recommendations :

*Recommendations submitted as a basis for legislative enactment, in reference to public health in New York, by Dr. D. B. REID. These recommendations are founded on inquiries carried on for many years, more especially in London, Edinburgh, Liverpool, Paris, Berlin, Stockholm, St. Petersburg, and latterly, in the United States.*

I. A MEDICAL BOARD superintending public health, supported by proper assistance in the architectural, engineering, and agricultural departments, should not only perform the functions that usually devolve on such authorities, but also devote its attention to the following objects :

a. Maintain a more extended meteorological register than is usually published with the weekly register of births and deaths, introducing more especially a record of the state of the hygrometer, and the use of test papers indicating local impurities of an extreme character from manufactories. Papers charged with coloring blue coloring matter to indicate acids and alkalies, with acetate of lead, and with iodide of potassium and starch, are the most generally useful, and have assisted materially in investigations where streets have been depopulated or deserted by the action of deleterious gases.

b. Examine annually the condition of the waters that surround Manhattan Island, record the amount of soluble and insoluble impurities, and of silt increasing or diminishing at the termini of drains and on the shores, preserving a careful record and specimens for comparison in future years.

c. Examine during the warmest weather, especially when the barometer is low, the condition of all burial grounds, whether in use or not, and report how far any of them, from their magnitude or other causes, require a moderate use of lime, or a more vigorous and absorbing vegetation.

d. Provide a sanitary map, pointing out localities where improvements are required for the preservation of public health.

e. Record and render public important recommendations, where they may not have official authority for action.

f. Report annually on the general health and strength of the children in public schools, as a key to the condition of the rising generation.

II. The provision of a building act, detailing essential points to be enforced in the construction of buildings and their disposition in blocks, streets or other places, both for the preservation of public health, the prevention of fire, and the due stability of the structure.

III. An extended system of cleansing, combined with an improved system of construction, applicable to all future buildings, and to the contiguous streets and pavements. This should comprise specific details as to all arrangements for connecting individual drains with sewers.

IV. The introduction of a law facilitating the inspection of lodging houses and other buildings, where this is requisite for the public health, and to which access is not given without opposition at present.

V. The provision of a grant to facilitate in connection with existing schools, the formation of a complete architectural college and museum, the introduction of degrees in architecture for the highest proficiency, and certificates to students engaged in all the details and collateral departments of architecture, whether for works of utility or decoration, both of which can be rendered more subservient to health.

VI. The allotment of a piece of land, to be placed under the direction of an able agriculturist, to be supplied abundantly with manure from the



city, to be made self-sustaining by the sale of produce, and to be devoted to the investigation of the more precise value and application of all refuse from the city, including the cost of removal ; and, further, to pave the way for future improvements in sustaining the surrounding waters in the most wholesome condition practicable, and encouraging a more extended agriculture in the vicinity of the city, or at some moderate distance for the more complete consumption of its refuse.

VII. The appointment of a commission, or some other authority, to report on the means of preventing disease in ships from ports of embarkation, trading largely with New York, and to enter on questions that would be most satisfactorily promoted by federal and international arrangements, in which Dr. Reid has endeavored to engage the interest of different American and European governments.

VIII. The institution of six illustrations, at least, or familiar experimental illustrations, in all public schools, of the nature of respiration and ventilation, and of the danger and effects of vitiated air, from respiration, combustion, drains, refuse and ill-ventilated, dark and damp habitations. Such illustrations, given eventually by the daily teachers, once a month, would add a very trifling sum to the annual expense of each school, be most acceptable to parents and pupils, lead to innumerable observations at home, and lay the foundation of endless improvements in individual cities and habitations, which it would be impossible to introduce or enforce by legal enactments beyond the provision here contemplated. It would also react on private schools, and further introduce the subject of sanitary improvement widely among those who want it most, as well as direct special attention to improved ventilation in schools.

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FRIDAY, *November 5, 1858.*

CONVERSATIONAL REMARKS.

Dr. GRISCOM in conversation, remarked : That the health of the city of New York should be under the control of an almost arbitrary power, like the Quarantine was under the jurisdiction of the health officer. And the person who was selected to discharge the duties of city inspector, he thought, should spend several months traveling in Europe, before entering on the discharge of his duties here, for the purpose of obtaining a knowledge of the sanitary regulations of European cities, with a view to the adoption in New York of any improvements which might come under his observation. Mr. R. M. RAITLEY, secretary of the association for improving the condition of the poor, he said, had traveled in Europe for the purpose of obtaining information respecting sanitary regulations abroad, and he thought would be a proper person to appear before this committee, and give whatever knowledge on the subject of the present inquiry of which he possessed.

Dr. McNULTY opposed the proposition to request Mr. Hartly to appear, and said he (Dr. McNulty,) was not willing that any other than a medical man should give his opinions upon a purely medical question.

Dr. GRISCOM was very desirous of placing the committee in possession of the facts with which Mr. Hartly was undoubtedly acquainted, and remarked that opinions would not be required of him except such as were suggested by the result of his observations.

It was decided that Mr. Hartley should be requested to appear before the committee.

Mr. MORTON and his witnesses had been notified to be present to-day. He however did not make his appearance, but during the course of the afternoon some of his subordinates were present, and it was arranged that



Mr. Richard C. Downing, superintendent of sanitary inspection, who had received the notice to appear before the committee but the evening previous, and who was not then prepared with facts to embody in a statement, should be present and be prepared to give whatever information he possessed, on Tuesday the 9th inst., to which time the committee adjourned without examining any further witnesses.

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TUESDAY, November 9, 1858.

### TESTIMONY OF RICHARD C. DOWNING.

Mr. RICHARD D. DOWNING, superintendent of sanitary inspection in the city inspector's department said: In answer to the first question, I would say, or rather, I do not pretend to answer the first question, except generally speaking. We can have no true comparison, as regards mortality, with the larger cities of this Union, with the city of New York. In the cities of Europe, I am but slightly acquainted with the mortality. The city inspector, himself, can give you these facts and figures, which I have reserved for him, which will show the condition of this city, in that respect, compared with other cities. But I regard, if it be considered that the health of this city is so inferior, I regard it as arising, first, from the large amount of emigration into the city, the poorer and the lower order of which remain in our city, who arrive here with the seeds of disease in their system, caused by close, heated, unventilated ship's holds, and live in a squalid, filthy and intemperate condition after their arrival. I speak not of all, but of a portion of them.

There is another important point in regard to the sanitary regulation of our city, which I have, for the six years past, which I have been superintendent of sanitary inspection, endeavored to urge upon the community, namely, *the faulty and incomplete manner of the sewerage*. With a city having the finest advantages for drainage; having, as it were, a back bone running through it from one end to the other. Yet I claim it is poorly sewerred, and that where sewers have been carried into the bulkheads, it has been productive of nuisance, and will continue to be until this evil is removed. And any person who will take a walk now, on an evening even as cold as the present time is, along our East river docks, will find an odor arising from them which will be offensive to the nostrils, and necessarily detrimental and dangerous to the public health. And in summer time, in passing the "man holes," as they are called, of the sewers, you will be certain to discover an unpleasant odor emanating from them. And why should it be otherwise, when there are sinks connected with one-half of our buildings, our slaughter houses, our soap factories, and a great many other lines of business, which are of themselves a nuisance. These sewers run into the bulkheads; there is no tide there to carry the contents away; the bulkheads are consequently filled up and great expense is incurred to have them cleaned, besides being disadvantageous to the public health. The remedy for this is simple and plain: Carry, as you should do, every sewer down to the end of the pier where the tide runs which will carry the contents of the sewer away; make your sewers as they are now, I am happy to say, in many instances, making them; have larger trunking sewers, affording a more easy and rapid flow of their contents. But the main object is to have the sewers run to the end of the pier where the tide will bring their contents away. Two years ago the Legislature endeavored to prevent the throwing of night soil into the river, and passed an act prohibiting such a disposition of it. Previous to that, however, there was a contract made by the city inspector's department, for the purpose of carry-



ing it away in light covered boxes. But, for the life of me, I cannot see the propriety of prohibiting the throwing of night soil into the river when the sewers cast it into the bulkheads. It is "penny wise and pound foolish." As an instance of the evils arising from this cause, I would allude to the case of a sewer at the foot of 16th street; it was carried down to what is known as the Lowber property, and there was no outlet to it. It remained in that condition four or five years. At last the common council passed a resolution authorizing the city inspector's department to connect it with the river by means of a trunk or wooden sewer, and when that was being done, I never smelled or saw, and for the last six years I have been in the habit of visiting very filthy places in this city, I never smelled nor saw such a pestiferous, pestilential hole. Every man I had with me was compelled to vomit at the sight of it. I give this as an illustration of what a sewer is, and to show the state of the place where they are emptied into. It is a fact that if a vessel with a white streak round it, newly painted, is allowed to lay there two days, the white paint will become almost black, so greatly does the filth discolor it.

Another great detriment to the health of the city is the condition of the streets. I do not now refer to the cleaning of the streets. I refer more particularly to our pavements. And if the gentlemen of the committee could have gone through the different wards yesterday, after the streets were cleaned, or would go to-day, they would find small pools of stagnant water in several places where the streets are uneven, in which, when I was a small boy, I would have been very glad to float a boat. This must continue to be so, so long as we use cobble-stone pavements, which will not bear the wear which the travel causes on streets which are much used by vehicles. In addition to that, cobble-stone pavement, although it may be laid in sand, after a few years becomes in such a condition that in rain it will be an inch or an inch and a half deep with mud. Under the same principle, if you should place a plank across a piece of ground in dry weather, and after it rains let a hundred persons go over the plank, the mud will ooze through it. Such is the condition of our cobble-stone pavement. It is a disgrace to this city. And it would be impossible to properly clean such streets, except some new instrument is invented, for no broom and hoe will clean them. The remedy for this evil is simple and easy. Have no streets paved with cobble-stone pavement, but have instead, either Belgian or iron pavements. The Belgian pavement I think is the best pavement which we can have in the city of New York. I would refer to the state of the Belgian pavement out here, [pointing to Park Row.] I do not think it has been cleaned in ten days, and I can show you some cobble-stone pavement that was cleaned yesterday, which is now in a more filthy state than that Belgian pavement.

Another source of nuisance is one I have fought against to get rid of, and that is the business carried on in some of the upper wards, of selling horse manure. It has become a large business, in which there is an immense deal of capital invested. I do not think that the selling of this manure is a nuisance *to the public health*, although *it is a nuisance*; but up town a great many cartmen and those who have horses, will form a sink hole or privy, immediately over their manure heap, and the contents are carried to the dumping place; the manure is not then fit for sale, and every sunshiny day, men are engaged in stirring it up to have it dried, and the unpleasant odor arising from it, extends for blocks around. I refer to the foot of 38th street, East river. Two years ago I succeeded in having this stuff removed from the North river side; but the common council have not yet passed a resolution authorizing the removal of this nuisance on the East river side.



Although I said I would not say much relative to statistics of the mortality, yet I wish the committee, when the city inspector is under examination, to compare the mortality of the upper, with the lower wards in this city. You will find the upper wards largely increased in mortality, while that region looks like the healthiest portion of the city. Why is this? In the neighborhood of the fourth and sixth avenues, far up town, a large number of the inhabitants live in shanties, exposed to the inclemency of the weather; and these shanties are built either in the front or in the rear of stagnant water, in sunken lots. It may be said "the remedy for this is within the power of the city inspector." This is the common impression; but gentlemen, the city inspector has not the power that some think he has. For the last six years, of my own personal knowledge, I know that we have had an inspection of every sunken lot on this Island,—and it is to be seen in book form in the office—together with the names of their owners, where we could ascertain who were the owners of the property. It was submitted to the common council that they might pass an ordinance to have these sunken lots filled up. Our duty ended there. And why? Before 1852 or 1853, the city inspector caused a large number of sunken lots to be filled in under ordinance. The next charter which was in operation, however, expressly provided, in almost the precise language I am giving you, that "all sunken lots to be filled in, shall be filled in under the direction of the street commissioner," and the last charter (1857) does not speak of the city inspector's department in this connection, but mentions the duty as belonging to the street commissioner's department, as will be observed by part of the 23d section, as follows:

"There shall be an executive department, which shall be denominated the 'street department,' which shall have cognizance of opening, altering, regulating, grading, flagging, curbing, guttering and lighting streets, roads, places and avenues; of building, repairing and lighting wharves and piers, the construction and repairing of public roads, the care of public buildings and places, and the filling up of sunken lots, under the ordinances of the common council. The chief officer thereof shall be called 'street commissioner.'"

We cannot fill up a sunken lot where the expense exceeds \$250; all we can do is to report such cases to the common council for the passage of an ordinance authorizing the work to be performed. There our duty ceases; and while we strive to the utmost, it is almost in vain, for it is impossible to have the ordinances passed as promptly as they should be. Last winter I visited Albany and prepared a bill, giving the city inspector power to act in these cases, which went to a third reading, and it is my intention this winter, if possible, to procure the passage of that bill. I regard these sunken lots, where stagnant water is, as one of the causes of the great mortality in the up-town districts of the city.

It is true there are pig-pens up town, and very immense ones, too, but for years past they have been decreasing, and during last summer, the commissioners of health directed that any hogs kept below 86th street should be removed by the city inspector. We commenced, and had already removed thousands, but the time assigned, in which to do it, was not sufficient to enable us to fully carry out the project of removing the hogs, and I learn that the commissioners of health have since rescinded the resolution. At all events I think the *board* of health have power to pass such a resolution, and that the *commissioners* have not. The present law, relative to the keeping of hogs, is a very queer one. It was passed in 1839, I think, and allowed four hogs upon a lot. It provided something like this: "No person shall keep more than four hogs upon any lot." Up town some of the people took the advantage of the law and obtained thirty lots on one



block, and put 120 hogs upon the ground, and they had no more than four hogs upon one lot. The offal boiling places, too, where offal was boiled for the hogs to eat, have been broken up to a great extent. I would state that there is an ordinance now before the committee on ordinances, of the board of aldermen, (I think,) relative to this hog business, which will remedy the evil entirely. The fault in regard to the ordinances regulating these things is that they have not been passed by the common council as fast as they were required by the growth and progress of the city. It is within two years, for instance, that some of our ordinances were passed, which apply to a further extent than the "lamp and water district," which extends no farther up than 42d street.

Now, another crying evil, and one, the remedy for which is only in the power of the Legislature, for no officer, whether he be a lawyer, physician, chemist or minister, can do any good except the power first emanates from the State, is to be found in our tenement houses. I have made this subject a matter of study. Two years ago I attended with the committee of the Assembly, which was appointed to examine into the condition of the tenement houses. The evils complained of as existing in them were, *a want of ventilation, a want of proper space, and the too great height of the buildings.* I speak of carrying the buildings too high, more particularly as a nuisance, dangerous to the public life (by accident,) than to the public health. They have only to be seen to be condemned, a large portion of them. As for remedying their filthiness it would be a very difficult matter to reach any law to reach them. In some of our filthiest tenement houses I could take you to rooms that are neat and clean, while other rooms that we have had cleaned out one afternoon, would, the next afternoon, present the same filthy and unsightly appearance as they did before. Until we pass a law, until the millenium comes there will be filthy people in the world.

But in a large portion of those tenement houses, especially in the Eleventh and Seventeenth wards—in the Eleventh ward particularly—they carry on a business of bone picking and rag picking; a business in which a great deal of capital is invested, year after year. That evil is now about to be remedied. An ordinance is also before the common council having that object in view, and the remedy it proposes is something like this: That there should be a general depot set apart by the commissioners of health, or some other authority, for the reception of these substances, and then to have the times for collecting the same regulated. So that evil I think is in a fair way of being overcome.

I have stated to you what I regard as the leading features why the health of the city of New York is inferior to that of other cities; if, as I said before, it is so: there may be those, however, of a minor nature. I have suggested remedies for most of those evils of which I have spoken. And I have to say this, that so far as the State laws are concerned, which regulate and in a measure control the public health of the city of New York, they are as full and as ample as possibly could be devised. They confer powers and duties equal to the occasion when any emergency may arise whatsoever and wheresoever it may happen. If an epidemic visits the city, the authorities have all power to employ the necessary physicians, build or hire hospitals, and have general powers to do all that is necessary for the benefit of the public health. They have strong absolute powers. It is only in those details that we are wanting in power, where ordinances of the common council will afford the necessary remedy.

The city inspector is an executive officer; in other words, he is the sheriff and the Legislature and the common council are the court. He is restricted within their bounds and the provisions of some prescribed ordinances. Any law to give his department unrestricted powers, without any



limit, I consider unjust to the people. I was very much surprised last winter when such a thing was proposed. I consider it very unjust to give him power to quarantine a house where there is small pox, or to compel a husband to have his wife or child submit to be vaccinated by any health warden; well that might do for Russia, but not for the city of New York.

Mr. MATHER—Then you are opposed to compulsory vaccination?

A. I am opposed to compulsory vaccination or to placing a house under restrictions. I believe that the commissioners of health as a body might very properly exercise that power; but placing it in the hands of one person, I consider arbitrary and unjust.

Q. What would you propose to prevent small pox?

A. We have dispensaries, where people can be vaccinated, and the mayor and commissioners of health also prepare places for vaccination.

Q. Suppose the people refuse to be vaccinated?

A. Then I doubt very much whether you can enforce compulsory vaccination. For instance, if any of the members of my family were going to be vaccinated, I might want to know where the vaccine matter comes from, for it might be taken from a child whose parents are unhealthy. I regard compulsory vaccination a thing that could not be enforced. Four years ago the health wardens from the Eighteenth and Twenty-first wards, in their capacity, undertook to exercise arbitrary power in case of small pox, and we had complaints to the effect that the men were examining the women's breasts, &c.

Now I have examined into the history of the city inspector's department. I find that the office of city inspector had been filled by a physician for a good many years; but I challenge one improvement ever suggested by a medical man while he was there. Dr. Dunnell, a homœopathic physician, who held the office in 1838, proposed some improvements; but Dr. Griscom, who held the office in 1842, left no visible mark behind him beyond his own signature—no visible evidence of having attempted by any ordinance or otherwise, to enlarge the powers of the city inspector, or to do more good than those who had preceded him. The last two persons who held the office were laymen. Dr. White, previous to the last two, commenced to make improvements and obtained more powers; but the last two have entirely revised the whole condition of that office. Their forms are now perfect; their machinery is perfect. There is no nuisance now which exists that is liable under an ordinance to be abated, but that is promptly done; and the records of the office will show a sanitary examination of every lot in the city of New York, the owner's name, the residents of each house as far as can be obtained, how many families and rooms in each house, how many persons occupy it, and whether the inmates are adults or children, and the condition of the cellars and the sinks in the yards. If the gentleman of the committee will come over to the office, I shall be very happy to point out the situation and condition of their residences. That, I believe, has not been done previous to the last six years. So that when a complaint is made against any place as a nuisance, we can tell the exact locality; for out of every hundred complaints received, fifty are made with an improper motive, out of spite against the health warden. In the street cleaning department, to which I have paid particular attention for the last three months, I have some few facts and figures in regard to the filth making in New York, and for that purpose, I give you the number of loads of stuff removed from the streets, and the ashes and garbage from the houses for three months at a time, as follows:



TABLE 25.

*Statement of number of loads of dirt, ashes, garbage, rubbish, manure, &c., removed from the streets of the several wards below enumerated, during the six months ending December 30, 1857.*

Wards.	Date of removal from, and to what time.	No. of loads of dirt, manure, and rubbish removed.	No. of loads of ashes, garbage, &c., removed.	Total No. of loads of dirt, ashes, rubbish, manure, and garbage removed.	Av. No. of loads dirt, manure, rubbish, &c. remov'd p. week.	Av. No. of loads ashes, garbage, &c., remov'd per week.
1.	From July 1, '57, to Dec. 30, '57.	11,064	81,075	19,139	425	310
2.	" " "	6,251	4,649	10,900	240	179
3.	" " "	12,889	7,042	19,931	495	271
4.	" " "	8,627	10,298	18,925	332	396
5.	" " "	11,172	10,520	21,692	430	404
6.	" " "	12,436	11,326	23,762	478	435
8.	" " "	8,792	12,972	21,764	338	498
9.	" " "	11,573	10,616	22,189	445	408
14.	" " "	7,429	8,778	16,207	285	337
15.	" " "	7,057	7,544	14,601	270	290
17.	" " "	15,475	12,758	28,233	595	490
20.	" " "	17,256	9,234	26,490	663	354
22.	" " "	7,660	5,683	13,343	294	218
		137,681	119,495	257,176		

TABLE 26.

*Statement of number of loads of Dirt, Manure, Ashes, Garbage and Rubbish, removed from the Streets of the Lower Wards, below enumerated, during the six months ending July 1, 1858.*

Wards.	Date of removal from, and to what time. 6 months.	No. of loads of dirt, manure and rubbish removed.	No. of loads of ashes, garbage, &c., removed.	Total No. of loads of ashes, dirt, manure, garbage, rubbish, &c. removed.	Av. No. of loads of dirt, rubbish, manure, &c., removed per week.	Av. No. of loads of ashes, garbage, &c., removed per week.
1.	From Jan. 1 to July 1, '58.	10,336	9,122	19,458	398	350
2.	" " "	4,101	6,637	10,738	158	255
3.	" " "	8,833	7,544	16,377	340	290
4.	" " "	6,236	12,720	18,956	240	489
5.	" " "	7,905	13,135	21,040	304	505
6.	" " "	7,530	12,388	19,918	289	474
8.	" " "	6,737	15,416	22,153	259	593
9.	" " "	8,386	14,855	23,241	322	571
14.	" " "	4,824	11,080	15,904	185	426
15.	" " "	4,595	9,257	13,852	177	356
17.	" " "	9,829	18,806	28,635	378	723
20.	" " "	10,950	13,652	24,602	421	525
22.	" " "	5,654	7,094	12,748	217	273
		95,916	151,706	247,622		



TABLE 27.

*Statement of number of loads of dirt, ashes, rubbish, garbage, manure, &c., removed from the streets of the several wards, below enumerated, during the three months ending Sept. 30, 1858.*

Wards.	Date of removal from, and to what time. 3 months.		No. of loads of manure, dirt and rubbish removed.	No. of loads of ashes, garbage, &c., removed.	Total No. of loads of dirt, ashes, garbage, and manure removed.	Av. No. of loads of dirt, manure, &c., removed per week.	Av. No. of loads of ashes, garbage, &c., removed per week.
1.	From July 1, to Sept. 30, '58,		3,550	3,775	7,325	272	290
2.	do do		1,711	2,369	4,080	130	182
3.	do do		3,782	3,269	7,051	290	250
4.	do do		1,934	5,392	7,326	148	414
5.	do do		3,842	4,547	8,389	294	348
6.	do do		3,739	5,269	9,008	286	404
7.	do do		2,659	5,948	8,607	204	456
8.	do do		2,761	6,155	8,916	212	472
9.	do do		3,861	5,700	9,561	296	438
11.	do do		3,553	5,170	8,723	272	396
14.	do do		2,143	4,241	6,384	164	326
15.	do do		2,115	3,392	5,507	162	260
17.	do do		4,202	6,513	10,715	323	501
18.	do do		3,050	5,640	8,690	234	433
20.	do do		5,416	5,265	10,681	416	405
22.	do do		4,101	3,689	7,790	315	282
			52,419	76,334	128,753		

*Recapitulation.*

From July 1st to Dec. 30th, 1857,.....	257,176 loads.
From January 1st to July 1st, 1858,.....	247,622 "
From July 1st to Sept. 30th, 1858, .....	128,753 "
Total,.....	633,551 "

I would not regard any change in the city inspector's department as of any benefit to the public health of New York; I cannot so regard it. I think myself that the remedy, the true remedy, would be in relation to the tenement houses; to have an act of the Legislature regulating them, and providing what size they shall be, and the area of room to each, the same as ships are regulated; and also prescribing the height to which they shall be built, and likewise providing for sufficient means for ventilation and light. In most of the other cases, I think the remedies for the evils are with the common council, and they will be enforced undoubtedly. They are doing so every day.

Mr. ELY—You are superintendent of the street cleaning department?

A. Yes sir.

Q. Do you think the street cleaning is now as well done as is practicable?

A. I do not sir. I will explain. It is impossible to keep some streets clean unless you have sweepers there three times a day. You sometimes have complaints that the garbage cart has not been round. In the tene-



ment houses the ashes and garbage will not be put out at a stated time, so that when the garbage cart goes round it will take it all away; if it goes at 10 o'clock it gets a part, at 11 o'clock a part, and so on during every hour in the day. Therefore this stuff is being continually thrown into the streets, and as I said before, some of the streets are as filthy after they have been cleaned as they had been before.

Mr. ELY—I observe that machinery is used in cleaning the streets?

A. I do not think it would do on cobble stone pavements. A machine that works as these machines work upon cylinders, or even with a rotary or side movement, must necessarily in sweeping the streets, deposit some of the dirt in holes as the machine sweeps along, and when rain comes the street looks as filthy as before. Upon the Russ pavement, however, they work very well, and some of them have been working on Broadway, under the direction of Mr. Morton. They can be used on Belgian, but more particularly on Russ pavement. I have endeavored to use iron or steel brooms, but we cannot make them work, and the expense is so great that the sweepers could not afford to pay for them.

Mr. MATHER—There is a law prohibiting the removal of dead bodies from the city?

A. You can bring a corpse into the city, but you cannot remove one without a permit.

The following questions emanated from Dr. Griscom.

Q. At whose suggestion was the law prohibiting the removal of dead bodies from the city passed?

A. I do not know at whose suggestion; it was customary all over, in different places.

[Mr. MATHER—For how many years?

A. I cannot tell; I am a young man comparatively speaking.]

Q. Under whose administration as city inspector, was the first census of the cellar population taken?

A. I do not know, sir.

Q. By whom as city inspector was the rule made requiring night scavengers to keep their cart boxes closed while at work?

A. I don't know. I suppose it was a common sense rule. It was passed before I was there.

Dr. GRISCOM—I should like to ask his opinion as to the causes of cholera infantum?

A. I cannot answer; I do not pretend to be a medical man. Neither would it be proper for me to give my opinion, as even doctors might disagree.

Dr. McNULTY—Statistics have been produced showing that the mortality is greater in New York, than in other cities; and it has been reduced to a mathematical demonstration that certain diseases more than others conduce to that mortality—among them cholera infantum. We want to know from him what causes lead to cholera infantum?

Mr. ELY—I presume the object of this question is to ascertain whether he is a medical man?

Dr. GRISCOM—That is not the object exactly.

Mr. DOWNING—I will answer the question in this way: In the discharge of my duties as superintendent of sanitary inspection, I have never yet felt the loss of a medical education, with the power of smelling, of seeing, and the power to cause to be abated any nuisance which I deemed detrimental to the public health; and believing that it does not require a medical knowledge to smell an odor which is sickening, or to know a filthy street, or a filthy house, or a leaky privy, or a filthy hog-pen, or any other nuisance of a like character. I do not think this requires a medical educa-



tion ; but on the contrary I would state that in carrying out the ordinances of the common council and the commands of the city inspector, in the serving of notices and enforcing these requirements, I have had more use of the legal knowledge which I possess, than I have had of any medical knowledge.

Mr. MORTON—Have you found any necessity for a practical medical knowledge in the discharge of your duties ?

A. No sir.

Q. Have you not found it constantly necessary to avail yourself of your legal knowledge ?

A. Yes sir, constantly.

Dr. GRISCOM—Will you describe to the committee, if you please, as you have had a good deal of observation on the subject, the general causes of typhus fever in the city of New York, of which some thousands die annually ?

A. I answer this in the same words that I answered your last question.

Dr. McNULTY—I want to ask you one question upon which you gave your opinion as a medical man.

Mr. DOWNING (interrupting)—No sir, not as a medical man.

Dr. McNULTY—I thought you said, in speaking of compulsory vaccination, that you regarded it as dangerous, particularly in regard to the matter used ?

Mr. DOWNING—No sir. In answer to the question of Mr. Mather, “ what means would you use to prevent small pox ? I said it was repugnant to any person to have his wife or children vaccinated by compulsory means, inasmuch as it was a question about which there was much dispute, namely, whether disease could not be traced in the vaccine matter. I did not say positively it was so ; I did not know that it was so ; I merely mention it is a mooted question.

Q. Would you consider yourself capable of judging of that question ?

A. Only as I have heard the remarks and opinions of others when I heard the question discussed.

Q. If you should visit a house in the discharge of your duties, where a patient was lying sick with the incipient stages of small pox, could you tell that it was small pox ?

A. I might not, or I might.

Q. Do you consider that any officer in the city inspector's department, upon going into a room where a case of small pox existed, would be capable of deciding the question whether the case was small pox or not ?

A. Yes, sir, and prescribe for the patient ; a graduate of your own college.

Q. I speak of the superintendent of sanitary inspection, and the health wardens ?

A. I do not know the abilities of the health wardens.

Mr. MORTON—Whose duty is it to report cases of infectious disease, and under what provision of law are such diseases reported ?

A. It is the duty of the health wardens, or any officer to report any case of infectious disease that exists, to the commissioners of health, or to the resident physician.

Dr. McNULTY—How do you ascertain it ? Are you capable of detecting it ? or are the health wardens ?

A. I think they are, sir.

Dr. GRISCOM—Do you think any measures could be enforced in this city by which the number of deaths by cholera infantum could be reduced ?

A. Only the measures I have spoken of sir. I consider all those evils I



have named, (the condition of the tenement houses, filthy streets, &c.,) as more or less endangering the public health.

Q. Will you answer the question directly?

A. I do not pretend to know. I say that these general things are productive of disease in New York, and as a matter of course I am inclined to the opinion that there would be less of disease of all kinds, were these nuisances abated.

Dr. GRISCOM—Do you know the causes which particularly produce typhus fever?

A. I answer this in the same manner that I answered question number one.

Dr. GRISCOM—I understood one of your answers as diametrically opposed to the other.

Mr. DOWNING—I told you that those causes which I enumerated were productive of diseases which were detrimental to the public health, and you may rank cholera infantum and typhus fever among the number.

Dr. GRISCOM—I asked you if you could tell the particular causes of typhus fever?

A. And I gave you the same answer. I have no other answer.

Dr. GRISCOM—Which is precisely no answer at all, for there are *particular causes* of typhus fever!

[A question arising as to what the exact answer to the first question was, the reporter was requested to refer to his notes and read the question and answer which he did as follows:

“Dr. GRISCOM—I should like to ask his opinion as to the causes of cholera infantum?

“A. I cannot answer; I do not pretend to be a medical man. Neither would it be proper for me to give my own opinion, as even doctors might disagree.”

Mr. DOWNING, (resuming): I will simply say that it is the duty of the health wardens and of the officers in the city inspector's department, upon finding from their own examination, or learning from information that any infectious disease exists, to report it to the resident physician, whose duty it is to have the case immediately visited and attended to either by himself or some of his officers. We don't judge of disease; we don't call diseases by their names, but we merely execute the commands of our superior officers, as the sheriff executes the order of a court of law in a *quo warranto* or any other case. The officers of the city inspector's department perform their duty well; and whether they know particular diseases or not, they have to visit cases of disease in all its forms and all its phases.

Dr. GRISCOM—The resident physician's duty is to visit cases of infectious disease?

A. When reported to him.

Q. Does that extend to diseases which are not infectious, such as cholera infantum, diarrhœa, &c.?

A. I think not, sir.

Q. Therefore his duties are not pertaining to the mass of disease in the city of New York?

A. I cannot say whether you regard the others as the mass of diseases. The health laws define the duties of the resident physician as follows:

“The resident physician shall visit all sick persons reported to the board, or to the mayor, and the commissioners of health, and shall perform such other professional duties as the board of health shall enjoin.”

Again:

“It shall be the duty of the mayor and the commissioners of health to



render their advice to the board of health, and to the city inspector of said city, in regard to all matters connected with the public health thereof."

Dr. McNULTY—Is the city inspector a commissioner of health?

A. He is, *ex-officio*, according to the law.

Q. But is he not a commissioner of health?

Mr. ELY—In the same way that the mayor is, I suppose.

Mr. DOWNING—Yes sir. The law says:

"The president of the board of aldermen, the president of the board of assistant aldermen, the health officer, the resident physician, the health commissioner, and city inspector, shall be the commissioners of health."

Dr. GRISCOM—Is one of the two thousand people who die annually of cholera infantum, ever reported *when sick* to the commissioners of health, so that the resident physician may visit the patient?

A. It is impossible for me to say. We very often send reports of sick persons over to them. This last summer I have often gone to places after the resident physician has gone, and attended to the dead, cleaned out the room, &c.

Dr. GRISCOM—Yes, attending to cases after the people are dead! But does that law apply to any other but infectious or contagious diseases?

A. If you ask me my opinion as a lawyer, I shall say yes, for the law says "the resident physician shall visit *all* sick persons reported," &c.

Q. Does he visit any that are not reported?

A. You will have to ask him.

Dr. GRISCOM—I thought you could tell, you seem to be so well posted up about the law.

Dr. McNULTY—What are the duties of the health wardens?

A. They report cases of sickness to the mayor's office.

Q. Do they from *personal inspection* report these cases to the mayor's office?

A. Yes sir, when they hear or know of a complaint. They act according to law or ordinance.

Q. What are the duties of the health wardens, *as defined by law*?

A. Their duties are regulated by ordinances. I think there is no State law defining the duties of the health wardens.

Q. Is there a city ordinance defining their duties?

A. The general duties of a health warden are defined partially by ordinance, but generally speaking, they are entirely under the direction of the city inspector, in the enforcement of regulations, and the abatement of all nuisances.

Q. Is it the duty of physicians to report non-contagious diseases?

A. I will answer that question by reading what the law defines as the duties of physicians, as follows:

"§ 10. It shall be the duty of each and every practicing physician in the city of New York:

"1. Whenever required by the board of health, or the mayor, and the commissioners of health of said city, to report to the city inspector of said city, at such times, and in such forms as said board may prescribe, the number of persons attacked with any pestilential, contagious, or infectious disease attended by such physician for the twenty-four hours next preceding, and the number of persons, attended by such physician, who shall have died in said city during the twenty-four hours next preceding such report, of any such pestilential, contagious, or infectious disease.

"2. To report in writing to the city inspector, the board of health, or to the mayor and the commissioners of health, every patient he shall have laboring under any pestilential, contagious, or infectious disease, and within



twenty-four hours after he shall ascertain or suspect the nature of the disease.

“3. To report to the city inspector, when required by the board of health, the death of any of his patients who shall have died of disease, within twenty-four hours thereafter, and to state in such report the specific name and type of such disease.”

Q. Is there any law requiring them to report non-contagious diseases?

A. I know of none.

### TESTIMONY OF GEORGE W. MORTON.

George W. MORTON, the city inspector of New York, said:

This committee originated, I believe, by a resolution of the State Senate, which was in words to this effect: To enquire what, if any alteration is necessary to be made in the health laws of the city of New York, to promote the health thereof. Am I correct, sir?

Mr. ELY—That is the substance of it, sir.

Mr. MORTON—(resuming), this would necessarily in one sense, embrace a very wide scope, and yet it might be restricted to a very narrow one. If it were limited to the question put forward by some of our medical friends who seek for a qualification in a public officer which is now unknown to our laws, it would have a very narrow scope; and I might, I think, with all due regard to those gentlemen, from all that has been said by them, confine my reply to that question, for that is all, in fact, that they have presented, and is all, I conceive, which they contend for—and that is *a medical qualification for the city inspector*. They recognize two branches in connection with that question. One is something like the idea about the old lady's kettle, and the story—I won't repeat it—of her never having it! They seem to assume this idea:—That if the city inspector is not a medical man, he ought to be. That is about the sum and substance of it all. They thus select the city inspector, forgetting that we have a system established by law, wherein the separate duties of professional services, and of an executive nature are clearly and directly defined. They forget that there is an organization which has extraordinary powers connected with the preservation of the public health of the city of New York, and that that board is composed of just those whom the people have chosen to protect their interests in many other respects as well as sanitary matters. I mean the board of health. They forget that so far as the professional services are concerned there is a medical board of advice—and I say *a medical board of advice*, because three of the members of the board of health are professional physicians, whose duty it is to advise that board and the city inspector in all matters affecting the public health; and it would be as absurd, or I might more properly say, it would be as just, for those gentlemen to attempt to establish by law a professional qualification of the same kind for the mayor of the city, the president of the board of aldermen, the president of the board of councilmen, or any other officer of the city government, even more than for the city inspector. But they say again, “If this is not the case it ought to be;” and therefore, as I anticipated by some of the questions that have been put to Mr. Downing, they might question some of the officers of the city government with regard to the origin of peculiar diseases, and attempt to connect them with the discharge of the duties of that office, when it is as foreign to the duties of these officers respectively as it would be to the duties of the sheriff of the county, or a ward constable. I do not intend to treat my medical friends with any disrespect, but I must say that if we were to establish that peculiar medical qualifica-



tion for an executive officer, I believe we might find some very good men in the medical profession, very good *physicians*, who would make good officers, but I do believe that they might be very poor *doctors*, if they would accept the subordinate offices which certain gentlemen desire to obtain for them. But I also believe that inasmuch as this professional knowledge is in no manner connected with the duties of the office of city inspector, directly or indirectly, I hold it to be perfectly ridiculous to urge the idea of a medical qualification. Now these gentlemen have attempted to advance this theory and to sustain it by statistics. We are told that the statistics of the city of London show a more favorable ratio of mortality, compared with the population, than the statistics of the city of New York do. We have been told that the city of Providence, the city of Boston, and other cities would present the same result. Very likely. But I have no doubt if I had the time to spare from my official duties, which I have not, to enter into an examination and estimate to sustain a theory that I might assume, but that I could show by statistics that the city of New York is a much healthier city than some other cities. But I do not conceive that that would apply directly to the question that is before this committee, namely, with reference to what, if any alterations are necessary to be made in the health laws of the city of New York, to promote the health thereof." When I say this I do not want these medical gentlemen here to misunderstand me. I do not mean to disregard the importance or repudiate the idea of the great benefit which the adoption of a proper system of sanitary regulations would be to the health of the city. On the contrary, my position in connection with the health department, for the last seven years has necessarily forced upon me knowledge which I should have had acquired, under those circumstances. Much in the way of improvement has yet to be done, much has been already done, and it will remain, by circumstances in the future, for our laws to produce these results. But I do mean to say that the city of Providence, with its small population, situated upon a side hill, swept by the sea breezes, does not form a proper subject of comparison with the city of New York, in calculating its mortality; and neither would it have anything to do with our laws; and the connection attempted to be established under these circumstances is foreign altogether to the question before this committee.

Mr. MATHER—Do you consider that the location of the city of Providence is more healthy than that of the city of New York?

Mr. MORTON—Yes sir. And so there are favorable circumstances connected with the city of London, which tend to make its mortality more favorable. I am not prepared to exhibit figures, as those medical gentlemen here have presented. I could not neglect other important duties to afford the time to make investigations and collect facts to controvert the statistics which have been presented here. But the general remark will answer all that matter—that the city of London is an old city, which was at one time a very unhealthy one. I have in this book which I hold in my hand, "The Annual Reports of the City Inspector of New York, from 1848 to 1852, inclusive,"—a report made in the city of London when its population was about that of our city by the last census. This is relative to the city of London proper—and I would here make the distinction, and a very important one should be drawn between the Metropolitan district, or in other words, the different organizations which are connected with the city of London, and the city of London proper. But here is the London bill of mortality for the year 1781, when the population of that city numbered 600,000, and at that time there were 20,709 deaths. And if they have improved in sanitary science, if time has developed certain causes of



disease, and those causes have been removed, it is not probable, in this day, that they are going to re-establish them; and so there is a degree of increased healthfulness in that city, as long as these improved regulations have existed. I have reason to believe there has been much improvement made in London, and other cities, and I hope these improvements will continue year after year, and I hope that the same important results will be affected in our own city. But in the city of London, although its population has increased, nevertheless, their improvements have been the work of time. Although much may have been done by its officers—and much importance may be attached to the question whether an officer is an efficient one or not, (whether he is a medical man or not, would be of little importance compared with whether he neglected the performance of his duties or not,)—although, I say, much improvements may have been effected by those officers, I do not think that the city of London could be compared with the city of New York, in view of the peculiar circumstances which have thrown upon us a great number of emigrants; and their children, generally, are the ones that add so largely to the numbers of our infantile mortality. I do not think it would be improper to say that there has been a decided improvement in sanitary science, and not alone sanitary science, but medical, which is connected with it. And here I might find fault with the restrictive views of the medical profession, which will not allow a man to depart from the old path, without calling him a quack. They should remember that something is to be left to the judgment of the man himself, and that as much depends in an able physician upon his talent and ability, as upon the education he may derive from his books. I have no doubt that much knowledge of this kind has been acquired within the last few years; but it is equally true that there were some mysteries connected with the medical profession, from which we should say that the members of that profession were superstitious. The medical profession at that time, (1781,) found some peculiar names for diseases. They confounded asthma and phthisic, while it is acknowledged that there is a marked distinction between them now. They have twenty-nine deaths put down to “colic, gripe, and twisting of the guts.” Our physicians have so far progressed as to modify these, and have substituted “intussception of intestines” for “twisting of the guts.” “Bursten and rupture,” was a peculiar disease at that time. Perhaps some of my medical friends might enlighten me as to what that may mean. Then we have “headmouldshot, horseshoehead, and water in the head.” Perhaps this “headmouldshot, horseshoehead, and water in the head” has something connected with hydrosyphilis; can you tell me doctor? I do not read these names with a view of ridiculing them, but I find that there were twenty deaths by this headmouldshot, horseshoehead, and water in the head, and we must attribute the favorable improvement in the bills of mortality in London, and the great improvement in the health (and I might perhaps say in the mortality) of that city, to that knowledge which I believe the medical profession has so largely acquired within the last few years.

I did not intend to wander off so far in these remarks. I entertain the highest degree of consideration for the members of the medical profession, and for some of them I entertain the highest degree of personal regard, who are friends that I take to my heart as I would brothers; and I regret that I have been obliged to make remarks in this connection, and under these circumstances, which would apparently bear so severely upon a profession that I estimate so highly. But there are certain gentlemen connected with the profession who will make pretensions beyond what we conceive to be their merits. They may take figures,—and to sustain a fancy



they may first create a theory and then attempt to establish it by bringing forward *ex parte* testimony. And it is with this view that I make these remarks: That if I might establish a theory I might produce statistics which would show an extraordinary degree of healthfulness in the city of New York. But that I do not consider to be the particular object of this committee. Am I right, Mr. Chairman?

Mr. ELY—We wish to ascertain the facts, and want a plain, unvarnished tale.

Mr. MORTON—(resuming), I shall now endeavor to get a little more at the substance of things. As I have said, those medical gentlemen, however able they may be in the practice of their profession, they must distinguish between the duties of an executive officer of our city government, and the duties which pertain to a physician. I do not believe that a physician is often called upon to perform official services, such as belong to the city inspector. *I am quite confident that the city inspector has not been called upon to exercise the knowledge of a medical man in the discharge of his duties.* Nor do I conceive that the theory of our laws—and I do believe them to be the most perfect set of laws for the sanitary regulation of any city in this Union ever contemplated,—required the city inspector to be a medical man; but on the contrary, that these provisions plainly indicate that *it never was contemplated that the duties of the city inspector were to be of a professional character.* We have not heard the theory of those laws assailed, sir. We have not had the facts presented which would show that there is a deficiency in regard to those laws, other than I have said; we have had fanciful statements attempted to be sustained by figures, which is foreign to the subject under consideration by the committee,—and that is, the mortality of New York compared with that of other cities. I do not pretend to present that subject before you, but rather to confine myself to the direct interests of the city of New York. And I will say that our medical friends have no more sense of responsibility actuating them in a desire to promote the public health of the city of New York than I have. My official term is now rapidly drawing to a close—a few weeks will terminate it; and I can assure you that when it is ended it will be a matter of as little regret to me as it may afford to the gentleman who shall succeed me a subject of rejoicing; for it is not a desirable position; and I am free to say that I would not place myself under obligations to serve through another term. Under such adverse circumstances in the city government as the city inspector finds himself surrounded with at present, I think few—for myself at all events I can speak, and say that I would be unwilling to assume the responsibilities of the office again, and be obliged to bear the faults of others to the extent that the city inspector necessarily has. That improvements may be made and will be made, with regard to our laws, I hav'nt the slightest question. I shall present some figures before the close of my examination which I think will entirely sustain me in the position that under our present laws, without any alteration whatever, the health of the city of New York will continue to improve. However, so far as it may be necessary to sustain the position hereafter, the figures will establish the fact.

The health organization of the city of New York is connected with the State. The Quarantine institution is a State institution. The buildings there are not under the charge of, nor the responsible care of any officer of the city government of the city of New York. If there should be any neglect of his duties by the health officer, the censure is not chargeable upon the city inspector. You have received the testimony of Dr. Wood, who stated that it was a matter of frequent occurrence that cases of small pox were introduced into the city from Quarantine, by the Staten island ferry boats. I have no desire to say, nor do I know that any censure is due the



present health officer in this respect, but I would ask my medical friends, and those of them particularly who urge this medical qualification for the city inspector and his subordinates, if they have ever known an instance where the health officer at Quarantine was not a physician? If he has always been a physician, then certainly they will not dispute with me that he possessed the ability to distinguish a case of small pox under those circumstances, and that he should have prohibited those parties coming up to the city. And have we any assurance that if a medical man held the office of city inspector, the duties of his office would be better discharged than are those of the health officer at Quarantine? When here we find, that there is a medical man stationed at Quarantine to protect the health of the city of New York, and notwithstanding that, there are men in the city of New York who come forward and tell you that it is a matter of positive knowledge on their part that cases of infectious disease have been introduced into the city through the means I have named. I would not do any injustice to the health officer at Quarantine, but I have commenced with Quarantine because there follows a connection directly with the city of New York, and a connection with some figures which I have, bearing upon emigration, which may become important to show in some degree the reason why our mortality bills exhibit a large number of deaths from certain diseases, or that a laxity in the discharge of the duties at Quarantine, in some degree, perhaps, is to be censured as one of the causes of inducing disease in the city.

To protect the health of the city (I am not now attempting to illustrate the theory of our present health laws), to protect the health of the city, and at the same time the interests of our citizens, not only in their health, but in their trade, in their progress and in their prosperity, there is a board constituted called the commissioners of health. They have no discretion over the health officer at quarantine, except in so much as that under certain circumstances, the mayor and commissioners of health have a right to send a cargo or part of a cargo of a vessel away from quarantine. The peculiar duties of the commissioners of health, in these circumstances, are to determine appeals that may be taken from the decision of the health officer at Quarantine. In many cases the health officer is under the necessity of detaining vessels a certain time which is established by law. But our merchants, some of whom I regret to say, are too reckless, in their desire to benefit themselves and advance their own interest in bringing ships here which, from their condition, would endanger the public health, apply constantly to the commissioners of health to have the decision of the health officer in certain cases reversed, without considering that the health officer is responsible; and that he would be censured if yellow fever should be introduced into the city, causing the loss of the lives of many of the inhabitants, and the destruction of trade and commerce for many years. That board, which consists of the president of the board of aldermen, the president of the board of councilmen, and the other persons that have been named, if it is to be insisted that the city inspector should be a medical man, might just as well be required to be composed of members of the medical profession. I do not see why it should not apply with equal force to the president of the board of aldermen and the president of the board of councilmen. Perhaps the gentlemen who framed this law did not think it necessary to go any further. The health officer of the State at quarantine, the resident physician and the health commissioner, are three physicians, members of the board of health and the commissioners of health, and who are supposed to be well informed upon those matters which will appertain particularly to the protection of the public health of the city. Now, why were the president of the board of aldermen and the president of



the board of councilmen included as health commissioners? Because there were other questions involved, which would come before that body, which were not medical questions, affecting the interests of the city. Yet it was not to be supposed that they would take upon themselves the responsibility of hazarding the public health of the city, if the three medical men should advise to the contrary. I do not think they would be willing so to do. But it was proper to have them members of that board; and that with all their knowledge of the city government, they should be parties who were not going to be intimidated with the scarecrow idea that it is necessary for the health officer to detain every vessel at Quarantine, and thereby to subject our citizens in their trade to unnecessary loss.

Now we will go a little further. The commissioners of health have power to direct the abatement of certain nuisances. And here I would observe that the city inspector himself, is not the party to make laws; his duty is to *enforce them as they are made by the proper authorities*. It is his duty to carry into execution the ordinances of the common council and the orders of the board of health and the commissioners of health in the same manner as it would be for a sheriff, or the officers of a court of record, to execute the directions of that court. The law provides that,

“§ 2. The mayor, aldermen and commonalty of the city of New York shall have full power and authority to make and pass all such by-laws and ordinances as they shall from time to time think necessary and proper, for the preservation of the public health of said city, and also for the abatement and removal of all and every nuisance in said city, and for compelling the proprietors or owners of the lot or lots, upon which the same may be, to abate and remove the same.”

Now these medical gentlemen might with the same propriety have applied to the Legislature to pass a law confining the persons who shall fill the office of the mayoralty, and the members of the common council, to the medical profession. If their desire was to preserve the public health, they might then go further, and strive to secure the regulating and grading of streets, the supervision of pavements, and a thousand other things. What a splendid opportunity would then be afforded in the medical profession, for a candidate for the mayoralty; every branch of our city government would be filled with young medical students, and physicians, who might not be able to earn a livelihood in the practice of their profession! The law also prescribes that

“It shall be the duty of the mayor and the commissioners of health to render their advice to the board of health, and to the city inspector of said city, in regard to all matters connected with the public health thereof.”

And again

“It shall be lawful for the said mayor, aldermen and commonalty, in all cases where they may deem it necessary for the more speedy execution of said by-laws or ordinances, or any of them, to cause any such nuisance or nuisances to be abated or removed at their own expense, and they are hereby authorized to levy and collect the sum or sums so expended, with lawful interest and all reasonable costs and expenses attending such proceedings, by distress and sale of the goods and chattels of the proprietors or owners of the lots and premises, from which such nuisance or nuisances shall have been abated or removed, or to recover the amount of every such expense, by action in any court of record, from such owner or owners respectively, on whose account the same shall have been expended, their respective heirs, executors, or administrators; in all which actions they shall, also, recover lawful interest upon the amount of said expense from the time of payment thereof, with full costs of suit.

“That the amount of every such expense, which the said mayor, alder-



men and commonalty shall incur or pay, as aforesaid, on account when ordered, shall be to the Quarantine ground, or such other place as the board of health shall direct; such removal or destruction shall be made at the expense of the owner or owners of the property so removed or destroyed, and the same may be recovered from such owner or owners, in an action at law, by the mayor, aldermen, and commonalty of said city.

“The board of health may send to the Marine hospital or such other place as the board of health may direct, all aliens and other persons in the city, not residents thereof, who shall be sick of any infectious, pestilential, or contagious disease. The expense of the support of such aliens or other persons shall be defrayed by the corporation of the city of New York, unless such aliens or other persons shall be entitled to be supported by the commissioners of emigration.

“The board of health shall have power to take possession of, and occupy, for temporary hospitals, any building or buildings in the said city, during the prevalence of an epidemic, if, in their judgment, the same may be required, and shall pay for private property so taken, a just compensation for the same.”

Thus there are very important powers vested in the mayor and board of health and commissioners of health, and I cannot see why they all should not be medical men as well as the city inspector!

It will also be seen that the city inspector has very little power except to execute the requirements of the board of health and the commissioners of health. The law further provides that,

“The city inspector of the city of New York shall have power—

“To appoint, by and with the advice and consent of the board of aldermen of said city, from time to time, all and so many health wardens and other officers as the common council or the board of health shall direct, to carry into effect the provisions of this title, and the rules and regulations of the board of health, the laws and ordinances of the common council of said city, and the laws of this State relating to the public health. Such health wardens and officers shall be subject to the supervision and control of the city inspector.

“To authorize such officers, at such times as he shall think fit, to enter into and examine in the day-time all buildings, lots, and places of every description within the city, and to ascertain and report to the Mayor and the commissioners of health the condition thereof, so far as the public health may be affected thereby.

“It shall be the duty of the city inspector, on complaint being made to him, or whenever he shall deem any business, trade, or profession, carried on by any person or persons in the city of New York, detrimental to the public health, to notify such person or persons to show cause, before the board of health, at a time and place to be specified in such notice, why the same should not be discontinued or removed, which notice shall be a notice of not less than three days, (except in case of epidemic or pestilence, the board of health may, by general order, direct a shorter time, not less than twenty-four hours), and may be served by leaving the same at the place of business or residence of the parties to be affected thereby. Cause may be shown by affidavit, and the order of the board of health shall be final and conclusive thereon.

“The said city inspector to give all such directions, and adopt all such measures for cleansing and purifying all such buildings, lots and other places, and to do or cause to be done everything in relation thereto, which, in the opinion of the mayor and the commissioners of health of the city, shall be deemed necessary. Every person who shall disobey any order of the city inspector, or of the board of health, which shall have been personally



served upon them, to abate or remove any nuisance in the manner and at the time described in such order, shall, on complaint of the city inspector, or of the person serving such order, before the mayor or any police justice of said city, be liable to arrest, and summary punishment by fine, not exceeding one thousand dollars, or imprisonment not exceeding one year, or by both such fine and imprisonment.

“To adopt such prompt measures, to prevent the spreading of any contagious, infectious, or pestilential disease, as shall be directed by the mayor and the commissioners of health, when it shall appear to the mayor and commissioners of health that any person within the city is afflicted with any disease of that character.”

Now I do insist that the mayor should be a doctor.

It seems to me that there are a sufficient number of laws to protect the interests of the city with regard to its sanitary condition, and that the Legislature has been very indulgent in this respect. Certain it is that the people of the city of New York, have elected persons who are to protect their interests in many other things, which are almost as important to them as their lives. “The mayor, aldermen, and commonalty of the city of New York, shall have” certain authority, &c. Would it not be well to transfer that authority, and invest it in the academy of medicine? It appears to me that it would look well to have all the offices in the city government filled by members of the academy of medicine, the president of that body to be mayor, &c., &c. ! I say that with all respect for the gentleman who holds that position of president, for I believe that he would be an honor to the mayoralty chair.

I read those sections for the purpose of showing that the State Legislature have recognized the principle of self-preservation in the people of the city of New York. They have not required us to go to Albany every time the people might require power, in case of any particular necessity, to preserve the public health, but they have vested the power in our local authorities. If the authority was transferred to the medical profession, would not that afford a splendid opportunity, doctor? If so, the city government would be in the hands of the medical profession, and we never could doubt but that then the health of the city of New York, would be the best of that in any other city in the world!

Dr. McNULTY—The medical profession ask only to protect the lives of the people.

Mr. MORTON—They ask for *offices*, for those are necessary to effect their object. We have found such disinterested patriotism in many instances!

I have spoken of the duties of the city inspector. Our friends may say, “if the city inspector is not a medical man, there is a necessity for a public officer who shall be.” I grant it. As the counsel to the corporation is the legal adviser of the city, so we should have a medical man in office, as a medical adviser; and I am not aware of any provision of law which will exclude members of the medical profession from any office pertaining to the health department, if they can show equal merit to that of other candidates. I will not say superior, (yet I think it is as important that a man should possess *merit*, as that he should possess a medical knowledge,) but if he could present equal claims, by reason of *merit*, I have no doubt that a doctor might make a city inspector, although they would find the duties much more arduous than sitting in an easy chair and receiving a fee of \$50 for an opinion, for it is anything but a rosy bed! But then the law provides for a medical adviser, and says:

“§ 8. The resident physician shall visit all sick persons reported to the board, or to the mayor, and the commissioners of health, and shall perform such other professional duties as the board of health shall enjoin.



" § 9. The health commissioner, under the direction of the board of health, shall assist the resident physician in the discharge of his official duties."

Dr. McNULTY—I want to know whether you assert that the statistics submitted by the medical profession are incorrect?

Mr. MORTON—I will leave the question to the chairman, in entertaining it, to decide whether I said anything of that kind.

Dr. McNULTY—Your reflection was to that effect.

Mr. MORTON—I said my duties would not permit me to devote the time to make an examination, to sustain by figures any fanciful theory I might set forth, to the effect that the city of New York, instead of being a very unhealthy city, is perhaps a more healthy one than those with which it has been contrasted.

Dr. McNULTY—Will you answer that question in the affirmative directly?

Mr. MORTON—No sir.

Dr. McNULTY—You have answered it indirectly.

Mr. MORTON.—I do not mean to impugn the motives of the medical gentlemen with regard to the truth of those statistics.

Mr. ELY.—I understood Mr. Morton in the first place in the same manner that he has just explained himself.

The chairman propounded the following question from the medical gentlemen:

Q. Has not the city inspector a voice and vote in the board of commissioners of health, and does he not act as one of the medical advisers?

Mr. MORTON.—I will give a specific answer to that question, which I wish to appear in the exact words in which I give it, as follows: That he has the authority pertaining to a member of the commissioners of health in connection with the gentlemen constituting that board, namely: His honor the mayor, the president of the board of aldermen, the president of the board of councilmen, the health officer, the resident physician and the health commissioner, the three last of whom are medical men, all of whom, with the city inspector, by the provisions of section 4, of the act of 1850, are constituted the commissioners of health. With regard to medical advice, I read the succeeding section 5, wherein it is provided that the three medical gentlemen, together with the other gentlemen constituting the commissioners of health, are made the medical advisers of the city inspector. Under those circumstances it would be the duty of the mayor and commissioners of health to render their advice to the board of health, and to the city inspector of the city of New York in regard to all matters connected with the public health thereof.

WEDNESDAY, *November 10th*, 1858.

Mr. ELY.—Do you remember, Mr. Morton, what you stated in your statement yesterday, as to what you understood to be the terms of the resolution under which the committee is acting? Do you remember the language you used?

Mr. MORTON.—I think I recollect the words, and I can corroborate the fact as to the substance, if not the precise words of the resolution, by one of the Senate reporters who was present at the time. The words, as I repeated them yesterday, I think, were that a special committee was appointed, on motion of Senator Brandreth, to examine and ascertain "what, if any, alterations were necessary to be made in the health laws of the city of New York to effect an improvement therein."



[Mr. BAKER, who was present, said : I think I can state briefly what were the words of the resolution. Senator Brandreth, in March last offered a resolution in words purporting to be these : " Resolved, that the Senate appoint a select committee to examine into the sanitary laws of New York and report what, if any, alterations are necessary therein." ]

Mr. ELY—I think that is the language of the resolution.

[The precise words of the resolution were not at that moment in possession of the committee.—Reporter.]

Mr. MORTON—I have no doubt the resolution was offered by Senator Brandreth with a view not to limit it to the simple proposition of certain gentlemen who were desirous of having their own measures pushed through the Legislature, but to see in the performance of his duty as a Senator, if there was anything which was essential to be done for the good of the people of the city of New York, and therefore there was sufficient scope given to the resolution. The resolution was very appropriately referred to the four New York Senators as the parties particularly interested in the matter, and afterward Senator Brandreth was added to the committee.

Dr. McNULTY—Could you not obtain the official record of the resolution ?

Mr. Ely—I sent to Albany for the Senate journal, but have not received it yet.

Dr. McNulty—Upon the language of that resolution will this committee take an important turn, because if the committee are merely to enquire as to whether there may be any defects in the existing laws,—if it is not an investigation into the sanitary condition of the city,—why of course any one can see at once that the investigation is in a great measure useless.

Mr. ELY—It occurs to me that if the sanitary condition of this city requires laws to remedy the evils, amendments must be made to the existing laws. There was a statement made that the sanitary condition of the city might be improved, and the object of this investigation, as I understand it, is to see what laws should be made to effect that improvement.

Mr. Morton then resumed his testimony : I have been attempting (he said) to show that it would be a piece of unnecessary legislation to make additional laws for our city, and with the approbation of the chairman, I will continue my observations. I would say, however, in commencing, that I shall confine myself more strictly to the business before the committee, than I did yesterday, for I must say, that I thought the matter was subject rather to ridicule than to earnest consideration, in the light in which it has been presented for the consideration of this committee. When gentlemen under the pretence of a great public good shall advance certain designs and present matters which are entirely foreign to the subject, with a view to support it, and show themselves wholly ignorant of existing laws, I think that I may be justified in saying that their motives may be suspected of being selfish, and that their ignorance of existing laws will not justify the importance of the position which they have claimed in view of their action. I said yesterday, at the close of my remarks, that all large cities should undoubtedly have professional advisors in the matter of the public health. Now I am free to say that I think some improvement could be effected with regard to our present organization in that respect, but, sir, that does not relate to the city inspector in the performance of his executive functions. The medical gentlemen, in the course of their testimony, have referred to cities in Europe, Paris among others, where councils and scientific bodies exist, composed of men of great ability, whose duty is not like that of the city inspector, to carry the existing laws into execution, but to consider those matters which might properly pertain to them as scientific men. Some such body may be necessary in New York ; a coun-



cil of salubrity, such as exists (as I am informed by Dr. White), in Paris. I would like to have the committee examine Dr. White upon that subject. He has investigated the matter considerably, and he is a man also of marked ability. Dr. Wood also sustained that position in his testimony, when I was here a few days since, when he said that such a body of men should not be merely persons in the practice of medicine, but that they should be in part composed of laymen. I think we have other distinguished authorities for saying the same thing. Dr. Reid, of Edinburgh, who was before the committee, also says that they should combine in such an organization, men who were educated in engineering and practical chemistry, in various branches as well as those who were more especially devoted to the practice of medicine. A person who practiced medicine would have a poor idea of the architectural and mechanical laws necessary to secure the proper ventilation of a tenement house.

With reference to the necessity of having professional advisers in our city government; as it is now constituted we have here the duty of the mayor and the commissioners of health prescribed to render their advice in regard to the city. The fifth section of the health laws reads as follows:

§ 5. "It shall be the duty of the mayor and the commissioners of health to render their advice to the board of health, and to the city inspector of said city, in regard to all matters connected with the public health thereof."

A further section goes on to provide that the resident physician shall visit all sick persons reported to the board of health, and shall perform such other professional duties as the board of health shall enjoin. Section 8 reads thus:

"The resident physician shall visit all sick persons reported to the board, or to the mayor, and the commissioners of health, and shall perform such other professional duties as the board of health shall enjoin."

The resident physician is the party to render professional service, and to give professional advice, and it is expressly declared in the law that that advice shall be given to the city inspector, in all matters pertaining to the public health. The resident physician has an assistant health commissioner, who, under the direction of the board of health, shall assist the resident physician in the discharge of his official duties, which, as it has been shown, are of a professional nature. Section 9 is as follows:

"The health commissioner, under the direction of the board of health, shall assist the resident physician in the discharge of his official duties."

Both these offices, as is very proper, are filled by gentlemen of the medical profession, and I concur with the suggestion so far as this is concerned, that members of the medical profession should fill positions of that kind. Dr. Rockwell has been our resident physician for a number of years, and Dr. Miller has been the assistant health commissioner. Those two gentlemen, together with the health officer, are members of the commissioners of health. It is said in the law that the resident physician shall visit all sick persons reported to the board. With reference to the duty of physicians to report infectious diseases, in reference to which Dr. Griscom asked me some questions. It is proper to refer to the law in that case. It will be found on page 34, section 10, which reads as follows:

"Whenever required by the board of health, or the mayor, and the commissioners of health of said city, to report to the city inspector of said city, at such times, and in such forms as said board may prescribe, the number of persons attacked with any pestilential, contagious, or infectious disease attended by such physician, for the twenty-four hours next preceding, and the number of persons attended by such physician, who shall have died in said city during the twenty-four hours next preceding such report, of a such pestilential, contagious, or infectious disease."



Thus you will see that the power is vested in our local authorities to have these cases reported, and the mayor and the common council can make this order a permanent one or to meet any contingency. If the board of health shall have neglected to provide for gratuitous and voluntary vaccination, or neglect to report cases of small pox, then I claim that that does not affect the city inspector either in the nature of his duties, nor will it apply to him in any way as having been neglectful of the public health.

The same section continues :

“ 2. To report in writing to the city inspector, the board of health, or to the mayor and the commissioners of health, every patient he shall have laboring under any pestilential, contagious, or infectious disease, and within twenty-four hours after he shall ascertain or suspect the nature of the disease.”

“ 3. To report to the city inspector, when required by the board of health, the death of any of his patients who shall have died of disease, within twenty-four hours thereafter, and to state in such report the specific name and type of such disease.”

Then there are certain provisions relating to boarding house keepers, masters of vessels, &c.

“ Every person keeping a boarding or lodging house, in the city of New York, shall, whenever required by the mayor and the commissioners of health, report in writing to the city inspector, the board of health, or the mayor and the commissioners of health, the name of every person who shall be sick in his house, within twelve hours after each case of sickness shall have occurred.”

“ § 12. Every master, owner or consignee of a vessel, lying at a wharf, or in a harbor of the city of New York, shall make a like report, and within the same period, of the name of every sick person on board such vessel, and no person shall be removed therefrom without a written permit for that purpose from the board of health, or the mayor, or one of the commissioners of health.”

Now, sir, if the board of health had ever made a requirement of me to act in a clerical capacity, if the board of health should have requested me to transmit reports, I can assure you it would have given me great pleasure to have carried out every direction. This would be a part of my duty. I have thus shown that the resident physician and health commissioner are therefore the proper medical officers of the city government, and that they were respectable physicians holding that office. I have shown by the law that it is the duty of the board of health to require all physicians to report every instance of infectious or contagious diseases ; and small-pox would be ranked among them ; and if the board of health had taken the proper measures to prevent its spread where it existed, the city inspector would not have been held responsible for any deaths that have occurred. I wish to take my own share of responsibility, but not that of others. You may ask, what would be the good of reporting any such cases to the board of health. Every one knows that the board of health, aside from Statutes, has certain powers by common law, and that they are the most extensive conferred upon any organization known to our laws ; but our laws go on to make a further provision. And here our medical friends who may desire to obtain place would have a full opportunity of so doing, if they could make this necessity evident, of which they speak, to the board of health ; there could be no difficulty perhaps in securing those places which would be consistent with their professional character, and with the pretensions which they make to ensure an improved condition of the public health of our city. Section 7 reads thus :



“The board of health may, from time to time, appoint so many visiting, hospital and consulting physicians, as they may deem necessary, designate their duties, and fix their compensation.”

There is the power given to the board of health to employ all the physicians in New York, if they should think it necessary, to designate their duties, and fix their compensation. Now, sir, if existing laws require any alteration or to afford better opportunity to fill official stations, I should like to know the meaning of this section. Why have not our medical friends presented themselves before the proper authorities, instead of year after year boring the Legislature for certain acts, supposing that they would not be appreciated at home by consulting our city authorities. Our board of health is responsible to the people; they are elected by them, and if they have neglected their responsibility, it cannot be alleged that they have a want of power in any respect to stay diseases of an infectious, pestilential or contagious character, and certainly they possess most extraordinary power. And as for visiting, hospital and consulting physicians, there need be no lack. If the board of health thought it proper to employ dispensary physicians they have the opportunity to do so. The opportunity is given to have a sanitary survey; they can appoint other officers as well as physicians for any purpose, if they thought proper to cause vaccination to be general, by visiting every family, and appointing respectable physicians in those sanitary districts, and the law permits them to have such compensation as would be just and right. Now, sir, I would be willing to rest this matter, so far as the professional qualifications of the city inspector is concerned, entirely upon that section if it were necessary so to do. I think that the matter carries with it an absurdity.

So far as the question of small pox is concerned, the board of health has been urged to make the necessary precautions, that a house where small pox existed should be put in quarantine. It has been urged by the physicians who have testified before the committee that vaccination should be compulsory. I have found physicians who have expressed themselves a little different on this question. I believe that citizens would be unwilling to have vaccination insisted upon. I do know of persons who represented themselves to be health wardens, and the popular impression is that the duty of the health warden extends to professional service. In the 18th ward two of these persons visited the houses of some of our citizens, and insisted upon a personal examination of the female inmates. Persons came to the city inspector's office, complaining of the insults which had been offered to the female members of their families. One gentleman, I recollect, was very indignant, and brought a very large cane, and when the health warden of the ward was pointed out to him, he said it was an entirely different man that was described to him, and that there must be some mistake. Mr. Downing sent parties to watch in the neighborhood, but he was unable to find out the guilty parties, although it was suspected that two young physicians were practicing in that way. I do not think our citizens would be satisfied to have a strange man enter their rooms and examine the family. I heard a distinguished physician say, the other evening, that so far as protection against small pox was concerned, it was a good deal like the means of salvation. It was provided for all, and if one failed to take the advantage of it, it was his own fault. Here it was a matter of choice, and the infection need not be spread; for if a person wants to protect himself, he can feel assured of that by vaccination, and he may mingle among patients as much as he feels it is necessary. It was urged by another gentleman in the company to which I have alluded, that it was a man's duty to protect the families, to which Dr. Clark, who was present, replied, they have the same control over their families, and how much more is it their



duty to provide for their families, than for the State to compel a man to undergo an operation, when our laws give the fullest protection to his personal property. Persons may have objections to undergo the operation, and there are distinguished writers who attribute bad results as having attended vaccination in some instances. I regret to say that I have in my own family an instance where I believe a child was crippled, owing to improper vaccination, to some extent. I may be wrong in so attributing it, but I would be the last man to unjustly reflect upon any one ; yet certainly bad results have attended vaccination in some instances ; and if vaccination is left to that class of men who combine the politician with the physician, we have no assurance that the community would not suffer in consequence ; for I do not believe that our respectable physicians would be willing to take those duties, which are usually so repugnant to them. I have shown that it is not the duty of the health wardens to report these cases of infectious diseases, but that the board of health, by calling upon physicians secure a prompt report of every case, and the means provided by law are sufficient for them to control the disease. The duty of the health wardens is set forth in title 3, of the Laws of 1850, which reads thus :

“ § 1. The city inspector of the city of New York shall have power—

“ 1. To appoint, by and with the advice and consent of the board of aldermen of said city, from time to time, all and so many health wardens and other officers as the common council or the board of health shall direct, to carry into effect the provisions of this title, and the rules and regulations of the board of health, the laws and ordinances of the common council of said city, and the laws of this State relating to the public health. Such health wardens and officers shall be subject to the supervision and control of the city inspector.”

This is the law ; they are the ministers of it, nothing more, nothing less. The ordinances forbid the contents of any privy being allowed to rest within two feet of the surface of the earth, under a penalty of \$25 for every offence. We have many overflowing privies, occasioned sometimes by the weather, and it is necessary to abate the nuisance. It is the duty of the health warden to keep a constant supervision over his ward, to see that these things do not occur, or if they do occur that the nuisance shall be abated as speedily as possible. His duty is to find the owner of the property, or his lessee, or a responsible party, to notify him to abate the nuisance. Sometimes it is difficult to ascertain the owners. In many instances the property is in law, in others in the hands of executors, and in other cases it is owned by non-residents ; and it is scarcely one time in ten that the health wardens will find a person home, that he may have to call repeatedly, and he is compelled to do so in order that the nuisance may be abated. These are not professional duties for medical men to perform, and if visits of this kind were made in proportion to a respectable physician's income, the physician's salary should be ten times more than a respectable physician would take ; and a professional gentleman who was competent to practice medicine, would not avail himself of a petty office of this kind. He would be more likely to be of a class that would be wholly unfit to perform the duties of any official station. I would here remark that Dr. McNulty has taken exceptions to the trades and business of the gentlemen I have selected to discharge the duties of health wardens. I appointed those gentlemen with a full knowledge of the responsibility resting upon me as city inspector, to be my subordinates in the performance of my duties. I had been six or seven years connected with that department prior to having been selected to become its head. I claimed to have possessed at that time, as much as I have now, a knowledge of the law and the organization upon which our health laws are based, together with a familiarity with the details relating



to all the branches of the city government. I appointed those gentlemen, taking upon myself the responsibility of the faithful performance of the duty in the enforcement of the laws and ordinances, in fact to sustain me in the duties which the law placed upon me. I have reason to say that most of them have diligently and faithfully, and I believe, ably performed their duties. I must say that the only instance where I have had to desire a gentleman to resign was the case of a gentleman who, if he was not a medical man, he claimed to be, and called himself a doctor. This was the only instance where I have had to make such a request upon any of my subordinates. In another instance a vacancy had occurred, when a gentleman whose name has been mentioned here, was offered the situation, but as I have said, when respectable physicians become informed of the duties of the office they decline its reception. The gentleman I refer to has been named, whose views would be interesting and valuable to this committee, I mean Dr. Bibbins, of the Demilt dispensary. I did not then, nor do I believe now that I was required to appoint any and every gentleman who might have received a diploma or a sheepskin, authorizing him to practice medicine, to the exclusion of other men who possessed in my judgment at least equal merit as to character and qualifications, based upon what I knew to be the duties which would devolve upon him; nothing of the kind. I regret that our medical friends who have shown so much ability in other respects, should have shown so little knowledge of our laws as to confound the duties of a health warden and an officer of the law with the rendition of professional services. Therefore it was not necessary that the health wardens should be able to vaccinate persons, nor do I believe that they would have the time necessary to generally vaccinate persons within their respective districts. I do not believe that it would add anything to the professional dignity or to the standing of the medical profession, that its members should be running through tenement houses and sticking their noses down privies, to see if they were healthy or not, and I do not believe that if offices should be provided, under such circumstances, that the medical profession at large would think it dignified. If it were the desire to provide this vaccination, I do believe that every facility should be given for it, and by the exercise of the authority which is vested in the board of health by the law, (as I have shown,) they have the power to appoint any number of visiting hospital and consulting physicians, designate their duties, and fix their compensation. They have also the right to call for those reports of infectious diseases, and they have further powers. The law is explicit in that respect; they are not simply vested with power, but it is enjoined upon them as a duty by section 5 of the laws, which I have already quoted, which reads in these emphatic words:

“§ 5. It shall be the duty of the board of health—”

“1. To cause any avenue, street, alley, or other passage whatever, to be fenced up or otherwise inclosed, if they shall think the public safety requires it, and to adopt suitable measures for preventing all persons from going to any part the of city so inclosed.”

“2. To forbid and prevent all communication with the house or family infected with any contagious, infectious, or pestilential disease, except by means of physicians, nurses or messengers, to carry the necessary advice, medicines, and provisions to the afflicted.”

“3. To adopt such measures, for preventing all communication between any part of the city infected with a disease of a pestilential, infectious, or contagious character, and all other parts of the city, as shall be prompt and effectual.”

Here they have given them power to establish small pox hospitals, and



all other kinds of hospitals, which shall be for the purpose of preventing the spread of any infectious diseases. Section four reads thus :

“To procure suitable places for the reception of persons sick of any pestilential, infectious, or contagious disease, and, in all cases where sick persons cannot otherwise be provided for, to procure for them proper medical and other attendance and provision.”

If it was necessary, as was proposed in the law urged by Drs. Griscom and McNulty, before the Senate, not only last year, but year after year, to place any house, or any apartment in a house, in quarantine, the power is vested in our own board of health to forbid communication; and heavy penalties are provided for the punishment of any person violating an order of the board of health. I claim that our laws have provided for the prevention of and against the spread of disease, as far as they can consistently with law, and in view of the rights of the individual, either by granting voluntary gratuitous vaccination, or by forbidding communication with persons who may be infected. A man may be abroad who is dangerous to the community, but I do not know that you are bound to take every person who may be raging in a state of insanity, and lock them up in prison. It would be more consistent with common sense and law to place such persons in a harmless condition of confinement. So with infectious diseases. When a man shall be dangerous to the community, the board of health can control that man, that house, or that neighborhood. The law which these physicians recommended, at Albany, goes further. It provides that certain physicians should visit families, and if they were not sufficiently provided against small pox, compel them to be vaccinated, and receive a fee for their services. I think that many of our medical men would want that position. The law went further in its provisions, namely, that any person who should refuse to obey that requirement should be punished by a fine of \$100, his property be taken from him, or in case he had no property, that he should be dragged to the toms as a common felon, and there incarcerated. For what? Because he chooses to exercise that right which God has given to man, the protection of his own person.

It would be an outrage to pass a law which would close a man up in prison cells, because he refused to have some politician doctor come in and say, “I do not think my dear sir, you are sufficiently protected against small pox; you must be vaccinated.” I think it would be conferring more extraordinary power upon an individual or a class of individuals than has ever been bestowed under our form of government. It might be well to do so in the Prussian army, but the American people are not brought to the condition of a Prussian army. If the board of health think proper to prevent the spread of any contagious, infectious, or pestilential disease, they can do so by seeing that communication is forbid with that family, by placing such a placard upon the door as shall give warning; but I hope I may never see the time when that power of legislation may be exercised to the arbitrary degree that a man may be dragged to jail because he refuses to comply with the requirement of a person who will get a fee for vaccination. I agree with Dr. Clark that if it is the duty of government to provide for vaccination, let us have our sanitary officers, but do not impose it as compulsory upon every person.

Senator DOHERTY—Is there not a corporation ordinance appointing two physicians to vaccinate, passed about 1851?

Mr. MORTON—I am not sure whether such a law was passed or not. If such a law was passed, it is only temporary under Dr. White.

The penalties for a disobedience of an order of the board of health, are very severe; not more so, however, than I conceive they should be. There



is another section, of an act passed 1849, to which I wish to direct the attention of the committee. It is as follows :

“The board of health may supply any vacancy that may occur in the office of either of the commissioners of health of the city of New York, whether arising from the temporary inability of the officer to discharge his duties, or otherwise ; but the person so appointed shall hold his office only until such inability be removed, or the sense of the Governor, or of the Governor and Senate be declared.”

You see we have the power to appoint a physician different from the physician at Quarantine, appointed by the State.

Another section reads thus :

“Every person who shall violate any regulation, order, or direction of the city inspector or of the board of health, made or given in the exercise of any power s vested in them by any section of this title, shall be considered guilty of a misdemeanor, and, on conviction thereof, be subject to fine or imprisonment, or both, at the discretion of the court. Such fine shall not exceed one thousand dollars, and such imprisonment shall not exceed two years.”

I think the board of health has ample power enough to call upon the officers of the county to enforce the laws and establish pretty stringent regulations regarding the health of the city of New York, and our friends are going far out of the way when they go to Albany to establish this necessity of which they speak. I think I may say that the city inspector can discharge his duties in perfect consistence with the spirit of this law, and do it well, without possessing a medical knowledge, but it is essential that he should possess certain qualifications.

I might review the provisions of the charter whereby the duties of the city inspector is extended. He has under him three bureaus established in his department—a bureau of sanitary inspection and street cleaning. That department, consistent with the duties of health warden, has extended jurisdiction not only over the operations of our government in the cleaning of streets as a sanitary measure, but reaching unto the most of our city, and causing, as I have said, the contents of an overflowing privy to be emptied, and the walls of a defective one to be repaired,—to have unsound or unwholesome substances removed,—in fact, to preserve the general cleanliness of houses, lots and premises.

Mr. ELY—All subjects pertaining to the health of the city comes under the bureau of sanitary inspection ?

A. Yes, sir ; those matters in reference to the abatement of any nuisance affecting the public health. The duty of enforcing the laws and ordinances regulating the health of the city, devolves especially upon the bureau of sanitary inspection, under the supervision of the city inspector. That bureau is now under the charge of a member of the legal profession, and he has testified before the committee that his legal knowledge was constantly required in the exercise of his duties, and that he had never been called upon to exercise those of a medical nature. The bureau of records and statistics, wherein is kept the coroners' returns of all permits of burial and disinterments, &c., is another department. The chief duties of that bureau consists in the preparation of the statistics of mortality, and the annual report of the city inspector, which by ordinance he is required to prepare, showing the number of deaths. That bureau is under the charge of a medical man. There are no laws to be enforced, except those of plain duty. With regard to the granting of certificates, that is a mere clerical service ; but in the compilation of the reports, the services of a medical man are of some use, and I have availed myself of the services of a competent medical officer in filling that bureau. But it is not his duty to



visit any nuisance, neither is it his duty to enter premises for the purpose of seeing whether ordinances have been violated or not.

Mr. ELY—Then he is not a sanitary officer?

A. No, sir; although in the absence of the city inspector, he may exercise his powers.

There is another bureau which has the inspection, and regulation, and management of the public markets. That is placed under the charge of the city inspector, with a view of securing a more perfect control over individuals who vend or expose for sale in our public markets, any article of unwholesome food. Recently the board of health made an investigation into the condition of the swill milk stables. I have the knowledge that cattle die of disease there. Cattle have been dressed and taken directly from the slaughter house to Washington market, after having died of disease; they were seized and taken from the stalls, but that was all the city inspector could do. The law gave him no power to displace persons who might be engaged in that nefarious traffic. I placed a watch over the persons who were engaged in this trade, night and day, and I have the satisfaction of saying that I believe I have broken up that trade in the city, as far as I had the power by law to do it, at least so far as any of those stables located in our own city have furnished the material. It is possible that some of this diseased meat may be brought from Brooklyn, but unless I can have a direct watch over the stables, I cannot prevent the sale of such meat. I appoint officers, whose duty it is to visit the public markets—not physicians, but old, respectable, competent butchers—men who, perhaps, if they were unable to tell of what disease a person might have died, when laid upon the dissection table, could at least tell whether the beef hanging upon a butcher's stall, had been properly killed, or whether the animal whose flesh it was, had died of disease. The city inspector has the inspection of weights and measures. That matter does not properly belong to the department, but it belonged more particularly to the city inspectorship, than to any other department of the city government.

That our city government is defective in its organization, in some respects, no one can doubt, but all persons admit—from the charter down to the details of our ordinances; but our friends who have been making the laws relative to the public health, a bugbear, have failed in the knowledge of our laws, when they have selected this subject for their operations. I have vindicated my department from a charge of neglect and incompetency, and I think I may refer without egotism to some remarks made by our medical friends, and which I appreciate as complimentary. Several of them have said that I have performed the duties of my office in a highly satisfactory manner, much more efficiently than they have been rendered in former years, and quite as well they think, as a layman could perform them. It has been my highest ambition to discharge my public duties faithfully. I am free to accord to the medical gentlemen, all the credit that belongs to them, and that is not a little as members of the medical profession. Dr. McNulty is a physician well known in our city, and it is unnecessary for me to say anything in his praise. Drs. Wood and Bulkley, and others who have been before the committee, are well known. I feel gratified at the kind expressions which I have received from them, and I do not believe they would be found urging these measures, if they were as conversant with the laws as they are perfect in their profession.

In speaking of the condition of our city, the medical profession have given prominence to the fact that bad air, bad food, and impure water are causes of disease and death. I think it does not require medical knowledge



to demonstrate that fact. The simplest exercise of reason will tell us that if a man is closed up in a tight room for any length of time, the air will become so corrupt that certain evidences of disease will be developed, and the man will die. It may be that suffocation may be produced in a greater or less time, according to circumstances; and at such times the assistance of a physician is very desirable. There can be no doubt that the impurity of the atmosphere must generate disease; the plain common sense of any laymen will tell him that. It is desirable to secure as free and pure a circulation of air as can be had under all circumstances. This is one of the great principles of sanitary science. So of pure water. A man may live for a time by drinking bad water, or by mixing alcohol with it; or he might generate disease by imbibing large quantities of good water, or on the contrary, he might die for the want of water, perhaps, in a shorter time than if he drank brandy and water. I do not think that a man could live a long time without water, and that it should be pure, every laymen would say that he would rather have a glass of pure water, than one full of animalcule or filth. A man may live for a certain length of time by partaking of a particular article of injurious food, but God has endowed us all with senses, and has given us judgment, which, if we exercised it, our bills of mortality would be greatly reduced, and man's days in this world would be greatly lengthened. The great difficulty is that the community do not appreciate the importance of this great truth in their individual action. It is the duty of government to provide so far as it can for the preservation of the public health, and any neglect to legislate upon that subject, should be visited upon the parties with its proper degree of censure.

Year after year, city inspectors presented to our common council, different subjects requiring their action in their local legislation, to prevent certain nuisances, and I have followed in their track, having presented various subjects, year after year, for their consideration.

References have been made to tenement houses, to the keeping of swine, to the adoption of a proper and effective system of street cleaning, to the sewerage system, to the necessity for building new docks of a different material from that which we now have, and of providing for dredging and the prevention of docks being filled in with filth, which, at low tide, are injurious to the public health. And what has been the result? The city inspector is not the law making power. If the houses of our citizens are not provided with ample means of ventilation, it has been no fault of the city inspector. I doubt very much if it would be wise to invest in any health warden, city inspector, or any one individual of an official character, the authority to enter a man's house and say to him, "I do not think you have sufficient ventilation here." I believe if such a power were delegated to any man, it should be to one, the nature of whose duties would be such as to lead him to judge of the matter. A medical man is very good in his place, but I think an architect and an engineer are equally essential in suggesting improvements in houses for the benefit of the public health. If a man had built a house to suit himself, and believed it to possess all that was requisite for the health of his family, I do not think he would be willing to have a gentleman enter and say, "I want you to make a window there," to gratify his caprice. You might think that there was ample ventilation. So in the matter of drainage. If a nuisance exists, the law provides for the construction of a drain; but if no nuisance existed, it would be an exercise of arbitrary power to say that a drain must be made. And if doctors differ so widely in the nature of their duties, how much more will they differ upon a subject upon which they have so little knowledge as this.



In reply to the first question propounded by the committee, I would say there are circumstances which will affect the public health in cities that cannot bear directly upon New York, as these gentlemen have presented it. The city of Providence being situated on a side hill, giving no opportunity for pools of water to remain, and cleaning the streets, and having no such travel as we have, it is reasonable to suppose that that place would be more healthy than New York, lying, as our own island does, in the form of a spoon. Besides the population of Providence is small. Boston has 160,000 inhabitants, and it is not more than three years when, in the space of six months, there were landed in the city of New York passengers equal to the whole population of the city of Boston. It is reasonable to suppose that the influx of this emigration, and the character of it, will exert a very great effect upon the health statistics of New York. I do claim that it is unfair to attempt to destroy the character of our city for healthiness, to represent it as a pest house, and thus to reflect upon the character of its city officials. Although our bills of mortality are larger than those of other cities, I hope the committee will also bear in mind the circumstances which contribute to this result. The city of London in 1781 had 600,000 inhabitants, and yet in that healthy year there were 20,000 deaths, about equal to our own mortality. The city of London has doubtless improved in this respect, not merely from the progress of sanitary and medical science, but necessity has forced upon the people of that city the knowledge of many of the local evils which have existed, and which has led to their removal. Commissions were repeatedly appointed by Parliament, as in this instance from our own State Senate, (and I give the Senate credit for the movement, and think it should be followed up in future time), who examined matters pertaining to the public health. The ablest men, not merely members of the medical profession, but of various other branches of business, appeared before them and spoke of the causes which proved detrimental to the public health, recommended what was advisable to be done to relieve the nuisance occasioned by smoking factories and other matters. It is reasonable to suppose that London has experienced much benefit from those investigations. I am not prepared to say that New York has been neglectful in this respect, because it should be remembered that only fifty years ago the City Hall was built with a brown stone rear, as it was not expected that any one was going to see it! We now number nearly one million of inhabitants, and it is scarcely to be supposed that when we had 70,000 inhabitants that those who preceded us anticipated the necessary requisites to preserve the public health. Now before one street is completed, rows of buildings of the most substantial and beautiful character are erected. There are a great many persons living in hods and hovels, and I grant that they should be removed; the owners of property ought to protect themselves against these trespassers, and a law was passed to give them ample protection against these intruders. And who can suppose that those persons will be exempt from disease?

Previous to referring to means by which the health of our city can be improved, I wish to refer to some figures. The law under which I am acting, was passed in 1850, and I am satisfied that previous to that, full returns of burials were not made. In 1850 it was forbidden by ordinance that any interment should be made in the city, south of 86th street. And a similar important improvement was effected in regard to the condition of the health of London, by means of Parliamentary committee. Our own common council appreciating the importance of the rapid increase of our city, passed an ordinance forbidding interments to be made south of 86th street. Most of all the removals have been made to Greenwood, Calvary, New York Bay, and other cemeteries. Every physician attending a patient who dies, or a



member of the family where the death occurs, is required to give a certificate of the cause of death, specifying the age, &c., of the person. That certificate is brought to the city inspector's office, a permit is granted, and I presume the bodies are removed. No interment can be made in the city, and a penalty of \$250 is imposed if a body is removed without a permit. Of course there are some exceptions to this, but they will be found among those gentlemen who are engaged in the business of child murder, who take away an abortion in a cigar box, as I believe it has been done in some instances, yet at the same time this will not make a large difference in the mortality. The tables of the mortality of New York may be confined to seven years. The total number of deaths in 1851 includes still-births, which is not included in many of the cities. Former city inspectors made it a practice to exclude still-births.

The city inspector presented the following statement of comparative mortality for the past seven years, which has been prepared for the purpose of showing the number of deaths ; still-born and premature births ; children under five years of age ; adults, and foreign born, for each year :



TABLE 28.

STATEMENT of infantile and adult mortality, also of deaths of persons of foreign birth, from 1851 to 1857, with years inclusive.

YEAR.	Total deaths.	Premature birth and still-born.	Under 1 year of age.	1 to 2 years of age.	2 to 5 years of age.	Total of and under 5 y'rs.	20 years and upwards.	Foreigners and unknown nativity, and born at sea.	Population	Alien passengers arrived at this port.
1851,.....	22,024	1,506	5,384	2,543	2,578	12,011	8,911	6,626	515,394	289,601
1852,.....	21,601	1,630	5,056	2,885	2,486	12,057	7,671	6,649	.....	300,992
1853,.....	22,702	1,930	5,794	2,942	2,297	12,963	8,061	7,293	.....	284,945
1854,*.....	28,568	2,050	7,116	3,697	2,810	15,673	10,571	10,202	.....	319,223
1855,.....	23,042	1,938	6,399	3,144	2,582	14,063	7,226	6,274	629,880	136,233
1856,.....	21,658	1,943	6,050	2,937	2,443	13,373	6,713	5,477	.....	142,342
1857,.....	23,333	2,017	6,446	3,159	2,612	14,234	7,529	5,927	.....	183,773
Total, .....	162,928	13,014	42,245	21,307	17,808	94,374	56,682	48,448	.....	1,657,109
Annual average, .....	23,275 3-7	1,859 1-7	6,035	3,043 6-7	2,544	13,482	8,097 3-7	6,921 1-7	.....	236,729 6-7
Annual average less than 1857, .....										
Annual average exceed'g 1857, .....	58 3-7	158 1-7	411	116 6-7	68	752	568 3-7	994 1-7	.....	52,956 6-7

\* Cholera—2,509 deaths from this disease, 1,903 of whom were persons of foreign birth.



The average number of deaths for the whole seven years is 23,275 3-7 or about 50 more than the mortality of 1857; while in 1855 and 1856 the mortality is below the average of the past seven years. Thus it will be seen that although we have a constantly increasing population, yet the number of deaths in our city has not increased during the past seven years. If we take the two years at the commencement of 1851 and 1857 we will find an increase of 1,309 in the mortality. The census returns show that our population increased 114,000, from 1850 to 1855, which was 25 per cent over the population of 1850. In 1851 we had 1,506 stillborn reported, and in 1856 an increase of 500 over that number. Some stringent law should be passed in reference to these child murders, for I cannot believe that this constantly swelling list of deaths is the result of accident. It will be seen that out of the 23,000 deaths annually, more than 2,000 deaths, if you may call them deaths, result from this cause alone. No disease, except consumption, has taken off so large a number.

Dr. GRISCOM.—Mr. Morton, do you think a knowledge of chemistry would facilitate your labors in ascertaining the local sources of disease and the means of their removal?

A. Well, I do not know that that particularly applies to the business of the committee.

THURSDAY, *November 11th*, 1858.

Mr. Morton, resuming his statement, said:

Mr. Chairman—It might be proper for me to make a remark with reference to the question which was asked me by Dr. Griscom yesterday. I have no objection to answer any question that should be propounded to me, at the proper time, but as your reporter justly remarked, frequent interruptions would destroy the effect of a continued statement, I do object to these questions until they are presented at the proper time at the close of my statement. When the medical gentlemen were being examined I desired to ask some questions, but when objection was made I thought it due to them and the committee that I should not interrupt them, and I believe the chairman of the committee will bear me out in the statement, and accord to me the honor that I did not interrupt them. There is a misapprehension on the part of some of my own friends relative to my course here. They seem to think that I am assailing the medical profession. It is not so, sir. That is an honorable profession, one like that of the soldier, which is most deserving the encouragement of the State. Although the soldier may be called upon to exercise a tyrant's power, and to cut people down, yet he is required to protect and vindicate the honor of his country. So, too, with the medical profession. The members of it are high-minded and self-sacrificing men; but I do not know that there is a higher degree of courage required for them to discharge their professional duties, than for those who generally claim to be superior to the most of our fellow citizens in many respects.

Dr. McNULTY.—I can assure the gentleman that any apologies for the medical profession are wholly unnecessary. They will not take any favors, and they ask no apologies—

Mr. MORTON—I can assure the gentleman that when he assumes to speak for the medical profession—

[Mr. ELY did not desire any further discussion relative to the medical profession, recorded.]

Dr. McNULTY explained that he was chairman of a committee of the academy of medicine, on this subject, that he attended these meetings for



the purpose of obtaining information, and was authorized to represent the medical profession before the committee.

Mr. MORTON, after indulging in some remarks with reference to the medical profession, proceeded with his testimony, and to say :

I referred yesterday to the fact that the total number of deaths during each of the past seven years presented an annual average of 23,275 3-7, and also mentioned the fact that, with the exception of 1854, when the cholera existed in the city, the average was not exceeded only by the year 1857, when its excess was 58. I also referred to the fact that the number of premature births and still-born, had increased from 1,506, in 1851, to 2,017, in 1857. Thus the annual average for each of the seven years was 1,859 ; so that it will be seen that if we take the average for each year, there is an advantage in favor of 1857, of 100, deducting the still-born. Of children under one year of age, the deaths have increased from 5,384, in 1851, until in 1857 they have reached the number of 6,446. There was a higher number still in 1854, during which year, as I said before, the cholera was prevalent in the city, the number then being 7,116. Of children from one year to two years of age, the deaths are found to be 2,543, in 1851, and in 1857 the number is 3,159. From two to five years of age, the deaths in 1851 were 2,578, and in 1857 they increased to 2,612. The average number of deaths at these ages, respectively, for the seven years I have named, was, of children under one year of age, 6,035 ; from one to two years, 3,043 6-7 ; from two to five years, 2,544 ; total of and under the age of five years, in 1851, was 12,011, and in 1857 it was 14,234, while the annual average was 13,482. That includes the premature births and still-born, if you may call those cases deaths where the children have never had life. You will find that the annual average is exceeded by the mortality of 1857, by a very slight number. (See table).

But now I would call your attention to the fact which will plainly prove the fallacy of what has been asserted respecting the progressive unhealthfulness of the city of New York, which has been attempted to be demonstrated with so much positiveness by some certain medical gentlemen. Of persons of the age of twenty years and upwards, the number of deaths has been, in

TABLE 29.

1851, .....	8,911
1852, .....	7,671
1853, .....	8,061
1854* .....	10,571
1855, .....	7,226
1856, .....	6,713
1857, .....	7,529

Or the annual average for these seven years being 8,097 3-7. So that it will be seen that in each of the years since the prevalence of the cholera, in 1854, the deaths of persons of 20 years of age, and upwards, have been less than the annual average for the seven years, and 1857 less than the preceding four years, and 568 3-7 less deaths than the annual average of of the past seven years. These figures I think conclusively show that so far as adult mortality is concerned, our city has been improving for the last seven years. Nay, sir, with the increasing population there is a less number of deaths as compared between the years 1857 and 1851 of 1,382. Now this certainly will not indicate New York as becoming so very bad with reference to its general healthfulness. If there are any causes over which our city authorities should have particular charge, they are those

. \*In this year there were 2,509 deaths by cholera.



causes which are supposed to produce diseases of an epidemic character; and those which the gentlemen have named with so much alarm to be dreaded by our citizens, as, for example, cholera, yellow fever, typhus fever, typhoid, small pox, &c. These diseases will affect persons of an adult age, and so, according to these statements which I have made, I think this attempted to be created alarm is wholly unnecessary and uncalled for.

Then the deaths of foreigners and persons of unknown nativity, and those born at sea, were, in

TABLE 30.

1851, .....	6626
1852, .....	6649
1853, .....	7,293
1854, .....	10,202
1855, .....	6,274
1856, .....	5,477
1857, .....	5,927

With but few exceptions the persons of foreign birth dying, are upwards of 20 years of age. Calculations which I have caused to be made, show me that of persons of 20 years and upwards, foreigners and persons of unknown nativity, and those born at sea, there are 3 5-6 deaths to one death of foreign born. This is an important fact as bearing on the question of the healthiness of this city, when it will be remembered, as I stated yesterday, that during six months of many of these years, there were landed at the port of New York alone, a million passengers, a number exceeding and actually double the resident population of the city of Boston, which is one of those cities which has been compared with New York in showing the comparative mortality of cities.

It will be noticed too, sir, by the figures, that there has been a reduction in the deaths of persons of foreign birth, of unknown nativity, and those born at sea for the last three years, as compared with the previous four years. The year 1855 exceeds 1857; 1856 is smaller than either, while 1857 having a slight increase is less than 1855. I mention this to show the effect of emigration directly upon the mortality of the city, independent of the mortality which occurs among persons who make this city their residence. It will be noticed that the figures show in 1857 that the deaths of foreigners, persons of unknown nativity, and those born at sea, were 5,927, against 9,529 of persons of 20 years of age and upwards, and as I have said the foreigners who die are of an adult age. It will be seen that the calculation I have made is sustained by the general fact here stated, and that only 4 foreigners die to 5 of persons of the age of 20 years and upwards. Now sir, what do the figures for this period show with regard to our population? We all know that it is much easier to take the census correctly of a small community than of a metropolitan city. It is well known that New York possesses some peculiarities which will prevent, to a certain extent, the obtainment of a correct census; and it must be known to every one that while none are entered upon the census lists other than persons of whom there is reliable information as being in existence, that the figures must be below the truth. They certainly do not exceed it. The population of our city is shown to have been in 1850, 515,394, and in 1855 it was 629,810, or an increase of 114,436. What were the figures presented by emigration during that period of time? The number of alien passengers arrived at this port were, in

TABLE 31.

1851, .....	289,601
1852, .....	300,992



1853, .....	284,945
1854, .....	319,223
1855, .....	136,233
1856, .....	142,342
1857, .....	183,773

Now, sir, it will thus be seen that we have had an annual average of 236,729 6-7 alien passengers landed at this port alone. Is it necessary for me to call your attention to the condition of the circumstances of those persons, generally, who have landed here? Can it be said, without any disrespect to them—since poverty is no crime—that they have sought in our land not merely the benefits of our institutions, and an opportunity to improve their condition, but *bread* has induced to a great extent this heavy emigration. And the obtainment of employment induces a certain class, after they arrive here, to remain in the city. There are those who engage in trade and in mercantile pursuits, who remain here also, but they constitute a small portion. Those who are in the best circumstances generally go to the country, while the city receives the greatest number of the poorest class, and those who are broken down by disease. It will be seen that the mortality of adult persons and that of persons of foreign birth, &c., both *decreased* in number when the number of arrivals of alien passengers was lessened in 1855 and 1856, while in the years when there was an increase of 410,000 in the emigration, there has been an *increase* of 450 deaths, or as I am able to demonstrate, 3 3-5 deaths of those of foreign birth to one death of native birth.

Q. In what manner does the increased number of emigrants enlarge the mortality? Are not the sick passengers taken to quarantine?

A. Some are sir, and some are not. Most of them are taken to Ward's Island, and these deaths are included in the city mortality. They are buried either in Potter's Field, or in Calvary Cemetery—the catholics who have friends to look after them are generally buried there (Calvary Cemetery)—and all are included in the city mortality.

Q. I desire to know what class of these persons are removed to the hospitals on Staten Island, whether it is those who are entirely friendless, or what class are they?

A. The commissioners of emigration generally remove all the sick emigrants to Ward's Island, although there may be some sick persons at the quarantine hospitals on Staten Island, but there cannot be any large number.

Q. I thought Doctor Harris said a large number of the sick at quarantine were persons sent down from the city?

A. That has reference, no doubt, to those who are sick with contagious diseases. As for instance, we have had some yellow fever cases in the city, and they were sent down to quarantine.

Q. Where do the cases of ordinary sickness go to?

A. The cases of ordinary sickness are sent to Ward's Island.

Then, in view of the facts which I have presented, I think it may be said that this emigration is one of the great causes of our mortality. The disadvantageous circumstances under which those persons come to our city and the miserable condition in which they live after they arrive here. we all know. And this state of things cannot be remedied unless our authorities can devise some means whereby they may secure comfortable habitations for the poorer classes. I do not see but that we are to be subjected to something of the evils of having them crowded up in improper tenement houses, and the mortality of our city increased thereby.

I will now speak of the subject of *locality*, and compare the mortality of



certain wards. The following statement presents the population, and the number of deaths in each of the wards during the years 1856 and 1857.

TABLE 32.

Wards.	Population.	Deaths, '56.	Deaths, '57.
1,.....	13,486	641	614
2,.....	3,249	130	150
3,.....	7,909	178	279
4,.....	22,895	752	712
5,.....	21,617	894	953
6,.....	25,562	1,089	855
7,.....	34,442	1,266	1,229
8,.....	34,052	1,038	1,014
9,.....	39,982	931	962
10,.....	26,378	832	871
11,.....	52,979	1,536	1,447
12,.....	17,656	951	1,022
13,.....	26,597	1,056	1,189
14,.....	24,754	881	1,029
15,.....	24,046	436	345
16,.....	39,823	1,153	1,225
17,.....	59,548	1,987	1,998
18,.....	39,415	1,197	1,246
19,.....	17,866	901	1,289
20,.....	47,055	1,695	1,918
21,.....	27,914	1,204	1,778
22,.....	22,605	910	1,208
Total, .....	629,830	21,658	23,333

I will select the 9th ward, where the inhabitants mostly are native born, and live in two story, two story and a half or three story houses, and will compare it with some of the other wards. Its population being in 1855, 39,982, its deaths were in 1856, 931, and in 1857, 962.

Now, we will take the fifth ward, a ward which has been rapidly changing in character during the years to which I have referred, and where old houses to a great extent have become occupied by many families of the poorer class. Its population was 21,617, and the number of deaths was 894 in 1856, and 953 in 1857, or only 9 deaths, during 1857, less than in the ninth ward, with only half the population of that ward.

Mr. SCHELL.—Is the New York Hospital included in that calculation? It is in that ward.

A. The total number of deaths in the New York Hospital during 1856, (I have not got the number for 1857 here,) was 287, and that number should be deducted. But still it will be seen that there is a large advantage in the ninth ward with reference to its mortality compared with its population. I referred to the fact of the ninth ward being in a better condition, and its inhabitants being placed in better circumstances, and being persons of better habits than those in other wards, for the purpose of showing that these things have an influence on the mortality to a great extent.

Take the sixteenth ward as another instance, compared with the ninth ward. We find that with a population varying 41 in number from that of the ninth ward, the deaths were 1,153 in 1856, and 1,225 in 1857, or an advantage of 263 in favor of the ninth ward.



Mr. SCHELL.—What do you attribute that to? The emigration or the poor boarders? The object of this investigation is to take care of the poor; the rich will take care of themselves.

A. It is both to the emigration and the condition in which the emigrants remain after they arrive here. Their circumstances will not permit them to occupy buildings of a larger class; and to some extent it is not only attributable to the poor class of buildings in which they live, but, also, their habits may develop disease otherwise.

Take another part of our city which is marked in its character, the fifteenth ward, and this is one of the most wealthy wards in the city; its population was 24,046, and in 1857 the number of deaths in it was 345, while in the fourth ward, with a population of 22,895, the number of deaths during the same year was 712, or more than double the mortality, and that, too, with a smaller population in the fourth ward. And here there are no hospitals.

The sixth ward has a population of 25,562, and its deaths in 1857 were 855. There we find again double the number of deaths compared with those in the fifteenth ward.

In portions of the tenth ward there are people in comfortable circumstances, while in other parts of it they are entirely the reverse. It has a population of 26,378, while the deaths in 1857 were 871.

The thirteenth ward, lying adjacent to it, but the easterly portion of which is almost exclusively filled up with persons of foreign birth, and those of poorer circumstances, with a population of only 219 greater than that of the tenth ward, there is shown an excess of 318 deaths over those in the tenth ward, for the year 1857.

In the fourteenth ward, with a population of 24,754, there were in 1857 1,029 deaths; and the twenty-second ward, with a population of 22,605, had 1,208 deaths in 1857, which was greater than those in either of the others I have named. The twenty-second ward is a ward where many people live in huts, and they are particularly liable to contract disease. I don't think these people would prefer to squat down on that land if their circumstances would allow them to live in a more comfortable condition. But "necessity," sir, "being a hard master," has compelled them to make their home where best they may, and therefore we find them as squatters upon the lands of others, obtaining their livelihood as they may be best enabled to do so. Their habitations are not well ventilated; that is certain. That is a new portion of our city; property owners will not build houses for that class of people who pay no rents, and there is but little opportunity yet of receiving rents from the class of people who reside in that neighborhood, although year after year our city is extending, and where there are many huts located now, we may soon anticipate seeing those handsome houses which are to be found in the other and better portions of the city. This result will necessarily reduce our mortality.

Now, sir, to refer back to the statistics, we find that in 1804 the city of New York numbered some 70,000 inhabitants. Undoubtedly at this time it is ten times that number, while a table of the mortality for the last 50 years, which I have prepared, will not, I think, show such a great proportionate increase in its mortality, which is indicative of an improved condition, so far as the residents of the city of New York are concerned.

But this heavy emigration has produced another result. We have not now the same number of cellar population that we had then. Our store keepers were in the habit of living over their stores, while the cellars were let to poor families. Emigration, however, became so great that property owners built tenement houses, and people have ceased to occupy cellars so long as they could procure rooms in these houses. Therefore we have not



so large a cellar population, which was one great cause of mortality. But we have as great evils substituted in those tenement houses.

And this is not the only evil. Not having anticipated this rapaid growth of the city, many other matters have not progressed so as to keep pace with its increasing population and prosperity. Take, for instance, the width of the streets. Mulberry street was originally an old cow path. One story wooden shanties were erected along its line, and then a better class of houses took their places; but in the lower portion there is found a continuous line of those tenement houses. With the narrowness of the street, the great height of these houses overshadow it, and the sun, if it ever reaches the cobble stone pavement at all, it is only for a few moments in passing, and then it disappears again. It is almost impossible to realize the dense damp atmosphere which there prevails, and which is drawn up into these houses, and constantly inhaled as the life-giving principle of those who occupy them. Now, in my estimation, it would be very important to provide, as one remedy for this evil, that the streets of the city of New York should be wider, or, in other words, that the height of buildings should be regulated according to the width of the streets. And these houses are, in many respects, detrimental to the appearance of the city, and are often the cause of injury to individuals. And I believe, while it would be better for the city if the property owners were to club together and buy up these tenement houses and erect proper buildings instead, it would also be to their own advantage pecuniarily; for one tenement house erected in a neighborhood, depreciates the property of the vicinity. Now, if pecuniary advantage is not a sufficient argument, I hold that in the erection of houses, in the future, the height of the buildings should be by law regulated by the width of the street.

Then we have had instances of other classes of buildings which overshadow in some streets, and are injurious to the property that is overshadowed. For instance, there is the sugar house of Mr. Stewart, which completely overshadows Reade street. I would not want to drive the factories away, but I think sufficient room should be given for light and air for their neighbors, as well as to secure safety in case of fire. That has been generally overlooked, but I have no doubt that the future will provide for this necessity.

These high tenement houses being erected in narrow streets, cause a great accumulation of ashes and garbage, which is thrown in the streets at all hours. You may clean them, and in a few hours hence they will be in nearly as bad a condition as they were in previous to being cleaned. We have a general disrespect of the principle of cleanliness—which may be said to embody the laws of health—in this respect. These substances decompose in the streets. There is not sufficient power in the sun and winds—so little of either get to the streets—to dry these substances, so that they may be cleaned frequently, and whenever it rains those streets are in a filthy and unhealthy condition in consequence.

The pavement is another source from which we may suppose this filthiness necessarily accumulates. During the past week we have had continuous rains. Ordinarily people have the impression that the filth is washed from the streets by the rains. But cobble stone pavements in this city may be likened to a country road, where the subsoil is turned up by the wheels of a cart as it passes over it; and in the city frequently the mud will cover the surface to the depth of three or four inches; and in fair weather when the street is as clean as broom can make it under the circumstances, yet it is still in a filthy condition. Therefore, one of the most important measures to be adopted, would be to secure a good pavement in the streets, which



will afford ample drainage, and at the same time one which will not constantly produce an accumulation of filth.

There are many other causes that have been referred to which produce diseases in our city. I have referred to some of them in this respect. The poorer classes of emigrants who arrive here occupy, principally, these filthy sections of the city to which I have referred. But there are other causes which Dr. White and Dr. Downing, who were former city inspectors, have called the attention of the authorities to from time to time, and I have the reports of those gentlemen where they speak of various nuisances.

There is one which to a great extent has been overlooked. That is the bone and flesh boiling establishments, or those horse-dressing factories which existed in Forty-first street, near the Tenth avenue, some years ago. Here is an indication of hygienic measures being forced upon us, by necessity in the course of time, as has been the case in London and other cities. It is within the memory of most persons, that when a horse or any other animal was found dead in the streets, it was required to be taken to the river and thrown in and left to float, making a very offensive mass. This subject our medical city inspectors, who had been in office up to 1845, entirely overlooked; and it was left to Dr. White—I use the term “doctor” in courtesy, for I believe he is not a medical graduate—to institute a reform in this respect. But he was a very important and efficient officer, and had that knowledge of nuisances which every person whose duty it is to abate nuisances should have.

Well, sir, there were persons who came here (Germans), who thought they could manufacture these horses into some valuable materials, and they established these boiling manufactories. They would dress the horse, saving his tail and mane, boiling his flesh to feed hogs which they kept, and using the bones for all the various purposes for which such bones are used. It is not necessary for me to go into the details for the purpose of showing that they made a very profitable business. But they became a nuisance, and it was great trouble to remove them. None of the residents of New Jersey, and the surrounding neighborhood, were willing to receive these factories, and so the people who had them were constantly driven off from whatever places they went to, and were thus constantly interrupted in their business, as they moved from place to place. Then the city gave out a contract to have the dead animals removed, which cost \$60,000 a year. After the business, however, was demonstrated to be a profitable one, the city was paid \$4,000 a year for the privilege of removing these dead animals for the purpose of manufacture in the manner of which I have spoken; and now we have a steamboat constantly engaged in removing them to Barren Island. This furnishes an illustration that the city will, from time to time, adopt the measures which are necessary for the preservation of its health, and I believe there is ample power given in the laws for this purpose. It is true, however, that our city authorities have been in some degree neglectful.

Dr. White, in his report for 1850, says, in relation to manure heaps:

#### MANURE HEAPS.

“Another source of great complaint, are the vast collections of manure that, along our wharves on the east and west of the city, are piled and heaped to rot and fume and ferment, to make them more saleable and fitted for the purposes of use. These collections are carted from the stables of the city to the river side, and there suffered to decompose; to facilitate which operation, they are frequently turned over, and watered, while the fumes and steam arise, and float on the atmosphere to the neighboring domicils of citizens, giving frequent and just cause of complaint. I have



made, under the direction of his Honor the Mayor, attempts to abate this nuisance, but with very little success. I have sent boats to remove the offensive collections, and carts to drag it away; and upon one occasion, the officers discharging the duty were assaulted, the carts seized and driven off, and a scene of riot produced. The only effectual method of abating these offensive collections, is either to prohibit the traffic, or compel the carts that collect the material to carry it out of the limits of the city, or on board of vessels, under penalty of forfeiture of license."

Now, sir, there are two kinds of this manure. And I will say that our city authorities have failed to provide for the prompt removal from the city of the material which is taken from the streets. Some people censure me because, they say, there are accumulations of manure on the docks, which, by the by, those persons will admit is an infinitely less amount than there has been there during any time for many years past, for it has been my constant endeavor to get rid of this material as rapidly as possible; but, sir, there is no place provided to which I can remove that valuable material. The ashes and garbage cost \$20,000 a year to remove and carry away. They are used for filling in slips in various places. But the manure is a valuable material for agricultural purposes, yet it needs some place where it may be deposited for sale with advantage to the city, which place is not provided at present. The attention of our city authorities have been called to this matter over and over again, but they have overlooked it.

The other kind is the horse manure. It is unnecessary for me to recur to the thousands of horses that are kept in the city of New York. Many persons have become rich by disposing of this manure. There are sections of the city where heaps of this horse manure were lying. A principal place was at 38 and 40th streets, near the North river. Another was a quarry where excavations were being made. But these heaps have been removed, the Second Avenue has been opened, other streets have been opened, and the city has improved to a great extent. These persons get this material for nothing, and it sells for a good price with considerable profit. I have called the attention of the board of health to this fact, and to the necessity of removing it; but yet, sir, they were not prepared to say, last summer, that these manure heaps were detrimental to the health of the city, even though they were turned over and exposed to the sun and rains, and allowed to rot, so that they might be more marketable!

Q. How are they to be removed?

A. I am showing that these are some of the materials which may be removed by the action of the Legislature or by the common council; either one has the power. The common council should do it.

Mr. SCHELL—They have not done it though.

Mr. MORTON—No sir. The common council, on the contrary, expressly set apart the ground at the foot of 38th street, by ordinance, to be used for this purpose. I have had complaints against it from the largest property owners in the vicinity. I have no authority to remove it, but on the other hand, it is put there expressly by ordinance. But some means must be provided for its removal.

The Legislature may pass a law imposing severe penalties in cases where this material is hereafter deposited on any lot of private property.

Now, sir, I mentioned the removal of offal in connection with this contract which I said was made. The slaughter houses come in this connection. Previous to 1856, an ordinance existed which required that persons who might use any slaughter house, should cause the same to be cleaned every day, and the offal removed. That is, if the slaughter house was situated south of 14th street. In 1839, our city authorities didn't consider it necessary to extend the restriction above 14th street, where the



greater portion of our citizens now have their residences. On the contrary, sir, it was provided that the offal should be taken north of 14th street, and there cast into the river. Our medical city inspectors failed to appreciate that this might be a nuisance, yet Drs. White and Downing made repeated efforts to have this nuisance corrected; and it was only in 1856, that I was enabled to have an ordinance passed, causing it to be removed. And further, an order was passed to the effect that the offal should be removed to such places as the city inspector and common council should direct from time to time; and the common council failing to appropriate a place, I directed it to be taken to the foot of 45th street, and removed from the city. I found great difficulty in enforcing this. In upper parts of the city, and in places adjacent to the city, this stuff is boiled for its fat, and the other portions are fed to the hogs which the parties keep who are engaged in the business. Those persons pay considerable sums to butchers for the right, as also, for the removal of hotel offal. The fact will show what stuff these swine are fed on, that a man told me that in the St. Nicholas hotel, the rats having been poisoned and thrown into the garbage barrel, he lost fifty or sixty swine. I had officers detailed at various points in the city to watch these persons engaged in this business, and arrests were made, I may say by the hundreds, for the violation of this ordinance. Many police magistrates failed to punish the guilty parties, although the provisions of the ordinance were clear, and the conclusiveness of the evidence could not be denied; yet they were frequently discharged with a few words of censure. Later, some parties represented to the mayor that they doubted that the city had the right to enjoin such restrictions. But I think the city has the right. It is not necessary to wait till a nuisance is established, before measures are taken to remove it. I think it is not necessary that the city authorities should wait until a nuisance is in such a putrid condition as that it shall be an offence to take it through the streets. And therefore I cannot say that I adhere to the point taken by his honor the mayor, who directed that the officers should cease to arrest parties for the violation of this ordinance. I will take this opportunity of saying, that the mayor has sustained me in every measure for promoting the health of the city, and I am confident, that although my opinion in this matter is different from legal authority,—I am confident that it has been the earnest desire of the mayor, in every respect, to enforce the ordinances, and to maintain and preserve the health of our fellow citizens. In giving credit to the mayor, I do it purposely to be understood that in no respect has he been wanting in the performance of his duties as a health authority of the city of New York.

Connected with this is the subject of slaughter houses. Complaint after complaint has come to me, and not alone to me, but to my predecessors in office. Dr. White, in his report for 1850, says on this subject:

#### “SLAUGHTER HOUSES.

“In presenting the hackneyed subject of the slaughter houses to your honorable body as a nuisance, I would not place them under the same category as the preceding. While they are justly subjects of complaint, as improper and unpleasant spectacles, as producing foul and unhealthy effluvia, as endangering life by the driving of cattle through our densely crowded avenues and narrow streets, gored frequently to madness by the impatience of their drivers, they still are what the others are not, necessary to the community, and to the daily wants of every one.

“In making any provision for the disposition of these numerous erections, some regard should be had to those most interested, viz: the butchers



themselves, who form a large, respectable and enterprising portion of our tax-paying citizens,

“It would not be just, if indeed it could be accomplished, to force these people out of the city, shut up these establishments here, and compel them at sacrifice and expense to build new slaughter houses out of the more densely populated part of the city, which in time would require removal again.

It seems to me that the only feasible plan, and the only one that would be generally adopted, is to afford means for these establishments to be removed in a manner advantageous to the owners. Once make it appear to the butchers themselves that they as well as the community are to be benefited by any plan, and we shall see no objection offered to the proposed removal.

“I would therefore respectfully recommend to the consideration of your honorable body, the system of abattoirs, as used in Paris. No city in the world is so well adapted for this as New York. With a line of wharf, extending almost completely around the city, including nearly twenty miles; with plenty of water for vessels, a country immediately adjacent for pasturage, and the uses of the Croton, nothing seems to be wanting but some efficient action, to speedily relieve the city from the disagreeable association of slaughter houses and dwellings standing on the same line on our streets.”

Now, sir, I do not believe there is a citizen other than those who might be influenced by party considerations, but who would consider these slaughter houses a nuisance, and that they should be prohibited in densely populated portions of the city. What do we find to be the case? Even in the fourteenth ward, in Mott street, opposite a public school are two slaughter houses. In Prince street, in the heart of the city, old dilapidated buildings, wholly unfit to be used as slaughter houses, are used for that purpose; yet there is no law that will authorize me to remove them. They have been presented to the common council as proper subjects for restriction, and I recommended myself, the first year of coming into office, and that no private right might be invaded, that the erection of slaughter houses should be prohibited south of a certain line, say 40th street, and on the east, say the 10th avenue, and on the west, Avenue A, or First avenue. Thus the whole of the slaughter houses would be in the upper part of the city, and they would be furnished with better places than they now have. Furthermore, having prohibited the erection of slaughter-houses, next prohibit the use of those existing within the prescribed limits, not until a period say of two or three or five years, although I would much prefer it was two or three months.

Another improvement has been effected in the city, which Dr. White inaugurated, and which the persons who preceded him neglected—and I do not know why it should have been neglected. It is a subject which was made a matter of investigation by a Parliamentary committee, and which was acted on by Parliament. I mean burials in city grounds and vaults. On this branch, Dr. White, in the same report which I have quoted, at that time said:

#### “BURYING IN CITY GROUNDS AND VAULTS.

“The subject of interring bodies in the numerous city vaults and burying grounds, is a matter of great importance in this connection. It is not only improper in itself, but a most efficient mode of creating and adding to a pestilential atmosphere; the juxtaposition of these grounds to residences, and especially the manner in which, from the necessity of the case, bodies are interred in them. In many of them the ground is so full, that it is impossible to open a grave, without disturbing decaying remains. The



whole ground has been gone over in this way several times ; indeed, how could it be otherwise, where scarce an acre is thus dedicated to the constant reception of remains ; and what must be the whole but a mass of putrefaction, acting upon the public health. During the prevalence of the cholera last summer, I closed some of the grounds. But such proceedings have little effect in permanently abating the nuisance, for this whole subject of burial in the city is such, either immediately or prospectively. I earnestly hope, therefore, your honorable body will take some immediate measures to pass an ordinance prohibiting the practice entirely. There are a number of beautiful cemeteries in the neighborhood of the city, for the proper deposit of remains, so that no reasonable obstacle presents to the immediate closing of these grounds."

Well, sir, if this matter had received the attention of the persons who had charge of the public health of this city before Dr. White, it had not been remedied by them, and it was by the efficiency of a layman that an ordinance was adopted whereby burials in the city were prohibited taking place south of Eighty-sixth street. Certainly this was a great improvement.

The introduction of Croton water was another improvement. No one will underrate the value of it to our city, aside from the considerations which are presented in view of the preservation of the public health. Its valuableness all are free to acknowledge, and notwithstanding the debt of \$15,000,000 which it has incurred, and the interest of \$2,000,000 in annual taxes to pay, yet I do not think we will find a man in the city who will not acknowledge its importance. As a sanitary measure, none will undervalue it. That great project was carried through by non-medical men. I do not mean to speak disrespectfully of the medical profession. Medical men know and appreciate these things ; but when it is alleged by these persons that the city inspector does not perform his duty, and so great and important interests as this—

Mr. SCHELL (interrupting)—I believe the medical men spoke very highly of the city inspector.

Mr. MORTON (resuming)—I am doing justice to the medical profession. My object is to vindicate the gentlemen who have held the office, against the reflections which have been cast upon them. A distinct assertion was made, that I performed my duty as far as it was possible for me to do, but that I was incompetent, and every layman was incompetent, to properly discharge the duties devolving upon the city inspector. Now, I am vindicating myself and those gentlemen, and I am doing justice to the medical profession. They appreciate these things, but it does not come within the duties of the profession to abate these nuisances.

There are other nuisances which produce disease, to which attention should be given, and which have not escaped the attention of former city inspectors.

Dr. White, in his report, speaking of a matter worthy of notice, says :

"The average age at death, in cities of the same age, and with a stationary population, is considered a good criterion in forming an estimate of relative health. But it is of little use, however, as applied to New York, on account of our fluctuating population ; it is, however, submitted for what it is worth :

#### TABLE

Average age of all who died in Boston	in	1845,	.....	21.43			
"	"	"	"	1850,	.....	21.06	
"	"	"	"	New York,	1845,	.....	20.78
"	"	"	"	"	1850,	.....	20.67
"	"	"	"	Philadelphia,	1845,	.....	21.85



I have referred to the width of streets and the regulation of the height of buildings according thereto. The *grading of streets* is another subject which deserves consideration, as bearing upon the question of mortality. Our citizens have not anticipated this rapid growth of the city by means of emigration, and have not adopted those measures with regard to the grading of streets and other matters, which they should. We remember the creek in Canal street, and the gas house sewer in Center street. And take for instance the hill in Worth street. Here we find a large section, as it were a bowl or spoon, into which much of the filth of the city is poured. It would be an expensive work to fill it in, but I think the accomplishment of that would be a benefit to the city. I think it would be a great advantage to our city at this time, if the general government would give to the city of New York the right to this property, and the city convey in return to the general government this city hall park for its purposes and that the city should make a park of the other ground instead of this.

Many other measures might be carried out in regard to the width of streets. Elm street could be widened into La Fayette place, and so through to Broadway, with comparatively little expense, compared to the benefit which would accrue to our city. I consider this whole subject as secondary to the Croton water, and the Central park.

Sunken lots up town have been referred to as being one of the causes of originating disease, particularly fevers. I have presented to the common council, ordinances for the filling up of these lots, which from the amount of business before that body, have been to some degree neglected. They have lain in the hands of committees for a length of time, and even after they have been sent to the proper department for proposals, and the contracts have been made, some of the lots have not been filled in. Is this the fault of the city inspector? My duty was to report them, and here my duty ceases. I think it would be a great improvement if the power of having sunken lots filled in was vested in the city inspector instead of going to the street department, for I believe it belongs to the duties of the city inspector. In cases where the expense did not exceed \$250, I have caused some lots to be filled in.

FRIDAY, *November 12, 1858.*

Mr. MORTON exhibited copies of reports of city inspectors in New York, for several years past, for the purpose of showing the improvement which had been made in these reports of non-medical men, stating that a large amount of statistical and other valuable matter was contained in the recent reports, which was not to be found in those compiled in former years by medical men.

Resuming the subject of sunken lots, Mr. Morton presented the following statement, accompanied by some remarks by the health warden of the 21st ward, as follows :



TABLE 33.

WARDS.	No. of complaints.	No. of examinations.	No. of reports on file.	No. of notices served.	No. of lots in progress of abatement.	No. of lots on which is no progress, referred to com on council and board of health.	Total No. of lots abated.
1st, .....	159	447	149	149	..	142	4
18th, .....	8	24	8	8	..	...	8
19th, .....	285	550	275	275	6	130	162
20th, .....	21	84	21	21	6	1	14
21st, .....	32	128	32	32	..	1	31
22d, .....	270	778	266	266	72	101	97
Total, .....	775	2,011	731	731	84	375	316

“Again, it is a frequent complaint by citizens, that the corporation contractors are tardy in the completion of their contracts, urging as their excuse, whether supposed or real, that they *cannot procure* dirt. Years, in some instances, pass before the terms of the contract are complied with. A case in point may be cited. In July, 1856, the health warden of the 19th ward brought to the notice of the department, the condition of forty-eight sunken lots in that ward, which had been a great and just cause of complaint. They were by you referred to the common council, and ordered to be filled under the direction of the street commissioner. The contract was awarded—yet to this day they have *not been filled in* or drained, though a good sewer is located in the street adjoining, into which they might have been properly drained, long since.

“I remark that the cutting through and grading of new streets, constantly obstruct the old water courses, and causes the water to stagnate, which would otherwise flow freely in its ancient channels.

“It is an observable fact, in some cases, that the filling of one lot, not unfrequently creates an equally objectionable nuisance on an adjoining locality. Under the circumstances, I would recommend that the owners of all low and sunken lots, be required to construct good and proper drainage to the street sewer, whenever a street sewer shall have been constructed. This would, in my opinion, be promotive of the public health, and would subtract from the mortality tables of the department.”

I am, sir, &c.,

( Signed, )

E. R. SHERMAN,  
Health warden 21st ward.

Mr. MORTON.—I introduce this to show that these nuisances are of daily occurrence, and there should be some better way of securing their abatement. There was an act presented to the Legislature last year, which I think with some modification would answer that purpose. It was bill 259, of the Assembly. The property owners object to having nuisances abated because it will subject them to present expense without any immediate return. I introduce this statement, also, to show that the city inspector’s department has been efficient in the abatement of nuisances as far as it was in its power.

There is another cause of nuisance, and which was presented to the board of health last winter, namely, the *cow-stables*. The manner of keeping these cows and the milk which they give were considered a local nuisance,



and detrimental to the public health. The committee will remember the remarks of Dr. Rotton on that subject. The subject having been presented by the city inspector to the board of health he could exercise no further control over it. These cow-stables at the foot of 16th street have been used for upward of twenty years, and recent officers should not be censured when those who held the office before permitted them to get such a foothold. I believe the only effectual way in which the evil can be abated is by an act of the Legislature forbidding the keeping of cattle in such a condition, and feeding them upon hot slop. That would be calculated to drive them out of the city, and the countries lying adjacent to our city would be likely to receive them. Therefore, I think an act of the Legislature on this subject would be very important with regard to the public health, for I believe that this is one of the causes of our infant mortality. And I believe the condition in which the cows are kept to be a local nuisance; and I will ask the committee to give this matter serious consideration, to have some act governing the keeping of cattle, not only in the city of New York, but also in other counties of the State. It may be said that New Jersey will probably receive these stables. Probably it would. But the efforts which have been put forth for the last few years in the city of New York to get rid of them have located many of them in Brooklyn. I think if New York would lead the way in this reform, other counties would probably adopt measures also prohibiting them.

There are a great many little nuisances which, perhaps, it is not proper for me to present to the committee, for I do not conceive that the gentlemen intended to establish this as a subject affecting the public health, although matters of that kind have come before the committee. I do not think they wish to enter into the minutia of little matters for our city authorities to investigate. I will merely remark that it is necessary to secure wide and well paved streets, and to suppress such establishments as these cow-stables. In the common council there is too much delay before any measure intended to promote the health of the city is passed. Therefore, I think it would be proper to empower the board of health to adopt such measures, in addition to the existing laws, as would be calculated to improve the sanitary condition of the city generally.

There is one subject I hope the committee will give particular attention to, as it is one of great importance to the citizens of New York generally, and more particularly to the mercantile community. Dr. Reid has written something in favor of the adoption of measures, connected with Quarantine, by which vessels should be fumigated by steam. It seems that great improvements might be effected; and as it is probable that Quarantine will be the subject of legislation this winter, I would suggest that that one branch would form a very important branch of inquiry at this time. It appears to be practicable that some such means could be adopted which would very much facilitate the fumigation of vessels. I have the views of Dr. Reid; and I hope the merchants will be heard upon the subject. I think many suggestions would be received from them which would be very useful, not only to the merchants individually, but to commerce generally, in preventing the loss of trade to the city.

If the committee have any inquiries to propound, I should be pleased to hear them.

The chairman then propounded the following written specific questions to Mr. Morton, which he answered as follows:

1. Q. How many cases of contagious, infectious, or pestilential disease have you caused to be sent to hospital during the past year and during your administration?



A. It is not my business to send those cases to the hospital; it is the duty of the resident physician.

2. Q. What disease do you regard as infectious, pestilential, or contagious?

A. For an answer to that I must refer to the discussions of the medical profession. There has been a great difference of opinion on that point. It is not my business to settle it. I have given what were the duties of the city inspector; and I would refer this question to the resident physician and the health commissioner.

3. Q. How many cases of small pox have you personally, or have the health wardens visited and examined during the past year?

A. It is not my duty sir, nor that of the health wardens to examine them. That is the duty of the resident physician and health commissioner and it is the duty of the physicians to report the cases of sickness to the board of health.

4. Q. How many cases of typhus fever have occurred in any one given locality, and how many have died in such locality from typhus fever?

A. For such information I would again refer to the health commissioner and the resident physician, who have the charge of these things.

5. Q. How many tenement houses have you caused to be cleansed and disinfected during the past year, and during your administration?

A. That would be rather a difficult question to answer, unless I went over the whole records of that department. I have caused my 22 health wardens, one in each ward, to exercise an active supervision over them, so far as one man could with an average of 4,000 to each ward in this city. It is their duty to enforce cleanliness.

Q. Have you any idea of the number?

A. It is their duty to visit constantly the number of tenement houses in the ward.

Q. You would not specify any number?

A. I could probably do so, by referring to the details of my department, but it would be a vast labor to go through them. The health wardens are required to visit every house in the ward. But in addition to that, it is their duty, wherever they find any filthy locality, whether it be a tenement house, or a part of a tenement house, or any building, to have it cleaned as far as they may be able to do so. In some of the wards containing about 60,000 inhabitants—a little city in itself—I have remarked it myself, that it requires great activity for one officer to have supervision over so large a number of persons. You may well conceive what his power is. His duties are not restricted to his ward either, for while he may be examining a nuisance in any house, if it is a duty that belongs to the landlord (such as the cleaning of the sink, &c.), the health warden has to run over the city to find the landlord, to cause the nuisance to be abated. This illustrates the duties of the health wardens, and shows that their duty is not a medical one.

6. Q. Are you, or the superintendent of sanitary inspection, or any of the health wardens, physicians? If so, please give the names of such physicians, and state the office they hold.

A. I do not regard that, sir, as pertaining to the duties of the department. There is no law, sir, which requires that they shall be.

Q. With regard to their being so, *are* they?

A. Is that pertaining to the question of this inquiry? I object, on the ground of its being irrelevant. I would say that I deem them fully qualified as to their respective duties.

Q. You decline answering?



A. I answer in the manner in which I have said ; I claim that they are qualified to perform the duties which devolve upon them. With seven years' experience in the department, I regard those men as qualified for the discharge of their duties.

7. Q. Do you not think that a knowledge of chemistry would facilitate your labors, or those of the health wardens, in ascertaining the local sources of disease, and the means of their removal ?

A. I would say that that question would perhaps allow of considerable time to be taken in answering it fully. I am not aware that the scientific world, (as I may say,) have succeeded in demonstrating the suitable causes of disease in all instances. Many things which the senses of man find to be offensive or repugnant, are detrimental to health ; but medical men have been found to deny some of the authorities which others have advanced ; but I am not aware that science, even, has found the cause of every disease. I would say further, that being familiar with the duties of the city inspector's department, I think that such knowledge might be *useful*, but not absolutely *essential*; but like all other persons, if I wish medical advice, it is the duty of the resident physician and health commissioner to afford that professional advice, as you will see by the law. And furthermore, having had the necessity to employ various persons for various services, I have no doubt but that if the city inspector and health wardens could embody that knowledge, it would be advisable so to do. For instance, it would be very desirable that he should be a first class lawyer—at least that he should possess some knowledge of law. It would be desirable too, that he should be a mason, a practical builder, an engineer, an architect, a butcher ; all these different branches relate directly and distinctly to the duties of the city inspector, in some degree. It being his duty to suppress the sale of bad meat, a knowledge of butchery would be very useful. If he wanted to stop a leak, repair defective privies, or to prevent a flow of water into adjoining lots, it would be very useful for him to have the knowledge of a mason and a practical builder, to remove these defects. But just so much, sir, as a general knowledge, and the principles of law will govern men in their actions as to right and wrong, and is necessary for them, rather than chemistry, exceeding that extent is it necessary that the city inspector should be well informed on the principles of law and general information, than a knowledge of chemistry, although such knowledge might be useful to him, as other knowledge would be. I have found it necessary to employ a chemist before now ; and the board of health found it necessary in the investigation with regard to swill milk, to employ eminent chemists ; and yet, sir, some of the doctors before the committee, differed in opinion from the chemists. We have had an instance recently, of the knowledge of chemistry, in the practice of Dr. Doremus. I have found a case where it was expedient to disinfect sinks ; and I think it would be desirable to say to the Legislature, that it would be well to cause the deodorizing of sinks, before their contents would be permitted to be removed. That process was demonstrated to be successful, by Dr. Coutaret, a celebrated French chemist, now resident in our city, who received medals for his improvements from different authorities in Europe ; and Dr. G. Glynn was present at my request, at some of these operations, and testified to the effectiveness of this process. If I had needed medical or legal, or other advice, I should have sought it.

8. Q. Would not a knowledge of the laws which govern the origin and spread of diseases, and of the causes which produce them, aid you and the health wardens in protecting the public health ?

A. It would be very desirable, sir, if our medical profession could agree upon one course of treatment of disease ; there then would be fewer deaths.



The medical profession disagree, and it would be difficult for any one man to know how to proceed in such cases. I think that our medical men, when they fail so evidently as they have failed, to agree in all instances, can scarcely allege that they can determine, in all instances, the causes of sickness.

9. Q. In what special localities, in your opinion, does cholera infantum, or typhus fever, prevail?

A. I can give them particularly by referring to the returns of the department.

Dr. GRISCOM—The object of this question is to ascertain the special localities in which these diseases most prevail—from the local circumstances of the place.

Dr. MORTON—The certificates of death would perhaps give a most satisfactory answer.

Dr. GRISCOM—I think it is very likely!

Mr. MORTON—I would not undertake to say how many died in any particular house or street. It might as well be asked how many cases of cholera infantum each of our physicians had certified to as having died during the year.

10. Q. If the weekly returns of mortality should at any time show an unusual prevalence of any particular disease, would you esteem it a part of your duty to ascertain the causes thereof, or direct the health wardens to do so?

A. If it was so as to be indispensably so, I would refer it to the resident physician and health commissioner to make such investigations, as medical men would deem it to be proper, and would direct the health wardens to perform their duties in enforcing the law—the great law of cleanliness—the great law of health.

11. Q. If the board of health should require a compulsory vaccination, as they have done on two occasions, would you or either of the health wardens be competent to perform that duty?

A. The question as stated contains what I believe to be untrue: that the board of health have ordered compulsory vaccination as affecting our citizens. They might have furnished the means of *gratuitous* vaccination to parties who would submit themselves *voluntarily* to the operation.

Dr. GRISCOM—Suppose they should require general compulsory vaccination, would you or the health wardens be competent to perform the services?

A. It was not the duty of the city inspector to perform such services; but it is provided in the law of 1850, section 8: “The resident physician shall visit all sick persons reported to the board, or to the mayor, and the commissioners of health, and shall perform such other professional duties as the board of health shall enjoin. (*Same ch. §8.*)”

And furthermore section 15 provides: “The board of health may, from time to time, appoint so many visiting, hospital and consulting physicians, as they may deem necessary, designate their duties, and fix their compensation. (*Same ch. §12.*)”

It has been shown that this is the duty of the physicians; that the duty of the city inspector is not to render services as a medical man, but that his duties are those of an executive officer.

Q. 11 repeated.

A. I should say that they would.

Dr. GRISCOM—I should like to ask the city inspector if he ever performed compulsory vaccination in his life?

A. No sir, nor made a pair of shoes!



Dr. GRISCOM—Is competent to vaccinate, and yet never performed vaccination in his life!

12. Q. Does a medical education disqualify a person for performing the duties of a sanitary officer, and if so, how?

A. I am not aware that the law makes any disqualification, or renders them ineligible. I am not aware that there is any provision of law to the injury of the medical profession in that respect.

13. Q. Do not the laws relating to the board of health and the commissioners of health, which have been cited, refer wholly to contagious and infectious diseases, and to times of general pestilence?

A. So far as disease is concerned, sir, any certain powers conferred upon them do, but so far as the abatement of nuisances, or that which may be of a questionable character is concerned, the board of health have power in every infectious disease, and over all the causes which produce sickness.

14. Q. Is there not a very large mortality from diseases which are not either contagious or infectious, and which might be greatly diminished by proper sanitary measures?

A. I have referred to different nuisances existing, and the fact that time, as well as the labors of our city government, will constantly indicate an improvement in our health, sir. I think the figures which have been presented, will show a continued improvement in the healthfulness of our city, throwing out the matter of emigration.

15. Q. Are not still births and premature births very frequently the result of disease and evidence of an inferior state of health among mothers?

A. That, sir, certainly our medical men should be able to answer. I never attended a case of midwifery, and I cannot say whether it is or is not. Were I disposed to enter into that inquiry, I do not know that I would be able to solve the mysteries of the sick room, with the same accuracy and confidence as the medical profession.

16. Q. In your judgment, might not great benefit result to the people, especially the poor, if the health wardens were capable of giving them advice in relation to the ventilation, drainage, &c., of their rooms, and other means of preventing disease among them?

A. Such advice, sir, I think they always do give and enforce, so far as their duties will enable them. If the health wardens should give lectures on temperance, it would be more useful in some instances, and I have no doubt that the records of the mortality for the past year show some remarkable causes of disease in regard to intemperance. And I think it would be much more useful to furnish them with the means which would make them comfortable. I deem, sir, that the health wardens are capable of performing all that their duties require. I think a knowledge of ventilation would be of very little importance. When Dr. Griscom was in the employment of the commissioners of emigration, a notice was sent him to examine the old Manhattan reservoir, for the purpose of procuring better ventilation. He did not see the means of securing that ventilation, but Dr. White took up a pole and dashed the windows out. That was practical advice, and I think it was useful information of a practical character.

Dr. GRISCOM—Are you not confounding that with a case at the Bellevue hospital?

A. I give it on the assertion of Dr. White.

Dr. McNULTY said: The city inspector has shown that the average annual mortality for the past seven years has been, from 1850 to 1855, 23,275 each year, or equal to one death to every 27.6-100 of the entire population.

He also asserted that compulsory vaccination had been enforced in 1824,



in which year, according to the report of the trustees of the Eastern dispensary, of the city of New York, "there were no less than 6,080 persons vaccinated, and in 1827 their vaccinations (the physicians) reached 5,257 persons." This vaccination was enforced by the proper authorities.

Dr. GRISCOM said: A statement has been made here and dwelt upon at great length with very considerable force, that the board of health have power to do all that is necessary for the city of New York, in the way of preserving its health. I beg leave, sir, to put in an extract from a "Report of the proceedings of the sanitary committee of the board of health, in relation to the cholera, as it prevailed in New York in 1849." This report is a complete exposition of the labors of that committee, when we lost nearly 4000 people by cholera. The chairman was James Kelly, who was a man of great energy and devotion to his duties. Another member of the committee was never absent from his duty, and was therefore familiar with the routine of labor with reference to the prevalence of pestilence in this city. The extract, commencing on page 33, is as follows:

"One of the subjects which attracted a large share of the attention of the committee was that of *nuisances*. As might naturally be supposed in so large a city as New York, and containing a population of so heterogeneous a character, almost daily complaints were made of their existence, and urgent petitions sent in requesting their immediate removal. Whenever it was in the power of the committee to do so, they promptly applied the proper corrective. In many cases, however, difficulties presented themselves not appreciated by the public, and which were not so readily overcome. It is not everything that is offensive to the sight or smell that is really a nuisance. What is looked upon as such by one class of persons, is not so by another. It is not always so easy, therefore, to decide at once what is a nuisance, and how far the authorities are justified in removing or suppressing it. Private rights, too, are not to be encroached upon, unless evidently required by the public good. In some of the large manufacturing establishments, too, considered as nuisances, hundreds of hands are employed, and upon which they depend for daily subsistence, and which ought not to be interfered with unless for the most imperative reasons of general and public security. The committee make these remarks in reply to the constant censure cast upon them by a certain portion of the public press, in relation to this matter. The committee have only to say, that they acted in all cases according to the best of their judgment and discretion. While they endeavored to respect private rights as much as possible, they did not hesitate to suppress establishments however large, which were manifestly injurious to the health of the surrounding population.

The committee cannot dismiss this part of their report without bearing the testimony of their approbation to the indefatigable labors of the captains of police and their health wardens, in attending to the cleansing of the city. They take the liberty, however, of adding that the department which has the cognizance of nuisances, is one of the most onerous, as well as important, connected with our city government. As at present constituted, it is wholly inadequate to the wants of our city. It requires an entire re-organization, and for this purpose, no period seems more appropriate than the present.

The labors of your committee, during the past appalling season of sickness and death, and the awful scenes of degradation, misery and filth developed to them by their researches, have brought into full view the fact that we have *no sanitary police* worthy of the name; that we are unprotected by that watchful regard over the public health which common sense dictates to be necessary for the security of our lives, the maintenance of the city's reputation, and the preservation of the interests of its inhabitants



Cholera may again assail us before we know it, and it is the dictate of true policy to be prepared in season to meet it; and not cholera alone, but any and every other malady which may be produced or aggravated by local causes. To no other work should the authorities address themselves more earnestly than the establishment of a thoroughly organized medical police, at whose head should be an active and experienced medical man. The advantage of such a measure would be incalculable!

Mr. MORTON—In answer to this extract, referred to the duties of the city inspector prescribed by law, (already given), and particularly to the 3d section.

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### TESTIMONY OF GEORGE W. BLUNT.

*Thursday, November 4, 1858.*

Mr. George W. Blunt appeared and presented the following statement:

I shall only answer the 3d question as to suggesting “remedies for the existing evils in connection with the public health.”

As one remedy, I would suggest that the city inspector be required to put all the filth and dirt, collected in the city, into scows, and remove it at once, instead of accumulating and piling it up on our wharves in masses of several thousand cart loads, as is the case at Washington market—there was an accumulation deposited there by the city inspector’s orders, which was reported to the city authorities by the harbor commissioners, in June last, and it has not been removed as yet, although several thousand loads have been taken away. The top of it is the common resort of persons to deposit their excrements; and this is within 200 feet of the greatest market in New York—the common resort of thousands. All our wharves are filthy in the extreme with human excrements..

Independent of the danger to the public health from these deposits, the damage to the wharves of the city is great. One of the best piers in the harbor, that at the foot of 5th street, has been broken down from the overloading it with dirt, by order of the city inspector.

GEORGE W. BLUNT.

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*FRIDAY, November 12, 1858,*

### TESTIMONY OF CAPTAIN GIDEON FOUNTAIN.

Mr. ELY—Do you know of any large accumulations of manure or of any offensive substance upon any of the city piers?

A. Yes, sir.

Q. Where do they exist?

A. The first is about the Washington market grounds—the block extending outside of west street, about 400 or 500 feet, and about the same distance on West street, coming within the range of from pier 20 to 23. The block, as originally filled in with the street dirt, has been covered with buildings called shanties, leaving avenues along through, running east and west. The south side is built on pier 20; and on each side of these avenues the sheds are built for the vending of market substances, except those fronting on the pier. There is about 180 feet where there are no openings. One avenue runs north and south right through the centre of these rows of shanties the whole length of the ground; then the shanties front on pier 20, and so along on West street, and then along on the avenue running down the whole length. Then there is another avenue running along out on pier 23, making two avenues running north and south, one of which has an opening, and the other has no opening. Out on pier 20 it runs along, and west of



that is a row of shanties running along 200 feet, ending on pier 23. The ground, 200 feet by 60, between piers 21 and 23, is occupied as a dumping ground, with two dumping boards,—one for manure and one for rubbish, garbage, dirt, rotten eggs, rotten vegetables, &c., from the market, and from the surrounding buildings. Those shanties I should think are from twelve to fourteen feet high; and there is continually there from 500 to 3,000 or 4,000 loads of manure. When the pilot commissioners took charge of it, the rotten and putrid stuff from the market was thrown right in among the manure; but within the last three or four months Mr. Blunt has seen the mayor, and that evil is now removed, so that nothing but manure is dumped there now, and boats are stationed for the reception of this rubbish and garbage; and rotten materials round about the market, from the groceries, and from buildings in the vicinity are sent down and dumped there, and I think to have such a thing where vegetables and other eatables are sold to the citizens, it is a disgrace to the city! As I said, during the last three or four months there has been an improvement in this respect; there has been a policeman stationed there, on the application of the pilot commissioners to prevent the indiscriminate throwing of rotten potatoes and everything else of that nature there. Complaint was made to the commissioners, and they requested me to give my particular attention to the matter. I reported the condition of things to the pilot commissioners, and then a policeman was sent there.

On the north side of Vesey street, running down, there is an avenue of about twenty or twenty-five feet wide, and may be 250 feet long. That avenue is boarded; and the continual wear caused by carts going along has broken up the boarding, and the mud there is horrible, especially in wet weather. Then there are other filthy spots in this vicinity.

Q. What means would you suggest to abate these nuisances?

A. I would clear the whole ground off—(there is a dispute between the city and the State in relation to the title to this property.) If that could be settled, the ground should be all cleared off, and regulated and paved with stone; and the old dilapidated concern of a market that is there now, which is a disgrace to the city should be removed, and a new iron market erected. When the shanties were removed and the ground paved, it would make a good place for the market wagons.

Another source of nuisance is, that at the bulkhead rotten potatoes and other things from the market are thrown over, filling up the place; and at low water they are left exposed, and there arises a most offensive smell which you cannot liken to anything!

Q. Do you know of any other nuisances existing in connection with any other piers in the city?

A. Yes, sir. I will mention another case. On the south side, at pier 21, it is about 720 feet from West street, out to the end of the pier. There are two boats that come in there from New Jersey, steamboats with passengers. Along that bulkhead, from pier 20 to 23, it is 150 feet by 60 feet, and is occupied for a wood-yard. You go out from the wood-yard to the pier. That place has been used for depositing garbage and rotten materials. The ground is completely covered, so that the stench arising as you go to the pier is very great.

Q. How far is it from this filth on this pier up to the market itself?

A. It is about 400 feet. I would also mention that the cobble-stone pavement, particularly from Dey street to Vesey street is in a very bad condition, and the water collects in the holes, and the street is in a most filthy condition.

Q. Do these nuisances exist up town? What is the extent of your district?



A. I go, sir, from pier No. 1 to 45. A person need only to go down to Washington Market to be convinced that the whole market and ground is a nuisance. To-day I have been down, and the place looks awful! I could state particularly the condition of the premises if it is desired.

Mr. SCHELL.—We have heard sufficient to form an idea of the condition of the place.

### STATEMENT OF A. J. H. DUGANNE.

WEDNESDAY, November 17, 1858.

Mr. A. J. H. Duganne who in 1857 was chairman of a committee of the Assembly, appointed to enquire into the condition of the tenement houses in New York and Brooklyn, presented the following statement:

*Firstly.—Over Population.*—In the first place, I must suggest the absolute importance of reducing the population of certain dense neighborhoods, by legal restrictions respecting the number of person, to be allowed the occupation of a single room; by prohibiting the promiscuous mingling of sexes and colors in lodging houses, by enjoining upon owners and agents of property the duty of lodging distinct families in separate apartments, and of preventing the sub-letting of bed rooms, and parts of floors, to other than the rentees of tenements; by prohibiting the letting of underground apartments for lodging places; by providing for a proper supervision of houses, subdivided into small apartments, in order to suppress the common practices of prostitution now pursued by young females who live there for the purpose.

*Secondly.—Darkness.*—The evils of darkness, arising from the want of windows in lodging and dwelling houses, must claim attention; and suggest another subject of proper and constitutional legislation. The building of rows of houses back to back, or the erection of two rows of such houses, with only a wall between them five or ten feet wide, should be forbidden; the letting for use as lodgings, dark, windowless, back apartments, or the intersection of tenant houses by long, dark, windowless passage ways, should likewise be prohibited by law.

*Thirdly.—Contractiness.*—No dwellings can be healthy, or be other than nuisances, which are built with contracted doors, halls, and staircases, where two persons, in every instance, cannot pass at the same time. In case of fire, egress for the inhabitants would be next to an impossibility, if fright or haste should create a panic.

*Fourthly.—Lack of Ventilation.*—This, of course is the chief matter of sanitary regulation; air being, as some old writer says, “the dish one feeds on every minute.” Legislation regarding this is imperative, because speculators in houses for the poor will pay no regard to ventilation, even if ignorance of its importance did not furnish them a constant excuse for neglect. Positive directions as to the number and location of openings for the passage of air, and regulations concerning the use of known methods of producing draughts through dwellings, ought to be embodied in building laws. The proportion of disease directly traceable to impure atmosphere, and its genera of fatal agencies is enormous, and ought to furnish ample ground for the most stringent means regarding the ventilation of all houses to be constructed or adapted for the residences of mixed numbers.

*Fifthly.—Construction of tenant houses.*—Legislation is here demanded imperatively. The walls of such houses should be made to conform to a common standard; height of ceilings, and number of stories ought to be specified, and employment of materials regulated by law. Many tenant



houses are mere shells of mason work, with interiors composed of light lathing, and pine or hemlock casings for partition walls, stairs and passages ; so inflammable that the entire structure is like a mammoth tinder-box.

*Sixthly—Want of water*—Here is a potent cause of many tenant house nuisances. There is no water higher than the ground floor, and the labor of carrying it up stair-cases and to rear apartments is a common obstacle to cleanliness in tenants. Generally the hydrant is placed in the common yard, or area, often it is located in the bar-room of a grocery, the consumers being thus obliged to obtain water from this source. Even when pipes are introduced to the upper landings, or floors, no provision is made for their security against damage, and they frequently freeze and burst, to the discomfort and danger of tenants. The supply of water at all times ought to be made imperative, and regulations concerning its use engrafted in law.

*Seventhly—Drainage*—In connection with suitable provisions for water supplies, proper means of drainage should be enjoined, from gutter of roof to gutter of alley. The narrow ducts and insufficient main pipe, now used by forty families, should be superseded by strong conduits of ample diameter, well washed by hydrant power ; and there ought to be in the basement of every tenant house a common reservoir or depository of garbage precipitated from the upper stories, which depository should be accessible to the city offal carts.

November 10, 1858.

#### SUGGESTIONS OF MESSRS. METHAM, BURKE AND NOWLAN.

Messrs. Metham, Burke and Nowlan, voluntarily appeared before the committee, and submitted plans for the improvement of sewerage in a sanitary point of view, endorsed by letters from Prof. Bache, of the coast survey, Russell Sturges and others, together with some observations on culverts and pavements, as follows :

18 CITY HALL PLACE, NEW YORK.

#### *To the Honorable Sanitary Committee:*

Gentlemen :—Herewith are submitted drawings of the proposed improvement for a “sanitary arrangement for the prevention of deposit of soil in the rivers, and the consequent noxious malaria arising therefrom.”

This improvement contemplates a series of “receiving basins” at the terminus of each principal sewer on the East and North rivers of this city, and so arranged as not to interfere with the present water front or dockage for vessels.

The drawings submitted represent one of these “receiving basins” 20 feet by 20 feet, and 16 feet deep, the bottom of which will be 21 feet below the level of the roadway. The width of the roadway being in conformity to the width of the pier or wharf. The proposed plan contemplates the construction of a breakwater, (as seen in the drawing,) this breakwater forms one side of the “receiving basin,” and provided with two flood gates to allow the excess of water from sewers to run out, but preventing the tide-water from running into the receiving basin.

The roadway is proposed to be of iron tile pavement, with trap doors, to dump street soil into the basin or lighter, as the case may be ; this arrangement will be understood from a reference to the drawings ; the lighters will run in under the piers where sewers so terminate, or alongside of bulkhead as the case may be ; it is proposed to have a small steam tug boat to drop and haul off these lighters from their different stations, say twice per day.

Another advantage claimed for this arrangement of receiving basins is, viz : the breakwater prevents the tidal water from running into the sewers



and forcing back into the small connecting house drains all the filth of the sewers, flooding our basements and cellars, and causing a great loss of property, and still more valuable health of the citizens, by the noxious effluvia from the sedimentary deposits left by the receding waters, and further causing a large amount of putrid animal vegetable soil under decomposition to evolve their deadly poisonous gases, ejected from the sewers at street corners, and man holes as now arranged, by forcing it back into the sewers and drains.

There has been sad want of forethought and engineering knowledge displayed in our city sewerage arrangements, and the sums of money already expended for this purpose, should have accomplished a system of sewerage creditable to our city and beneficial to its inhabitants, fully accomplishing the objects intended, viz: to carry off from our city the causes of such an amount of malaria as endangers our people, carrying off numbers of our population, similar to the sad experiences of Europe, from this cause of *imperfect sewerage*. And would call the committee's attention to the present condition of London as an example in its sanitary arrangements to be avoided, and the facts elicited on the present filthy state of the river Thames.

Let us look nearer home; what do we find in a sister city, Philadelphia. That great organ of public feeling, the press, speaking and warning in prophetic tones of the calamities to be expected if means are not taken to cleanse the rivers surrounding that city of the filth deposited from sewers exposed to the heat of the sun ranging from 90° to 120° in the sunshine, hatching into life myriads of microscopic atomic insects, creating cholera, yellow fever and other complaints. Can it be possible, in the face of these facts that the intellectual and rational community will calmly contemplate the want of forethought presented to their eyes daily, when both medical and chemical experience has taught us, and forewarned us of the consequences?

This state of things cannot be attributed to any want of liberality on the part of our cities, but to the employing insufficient means to attain the objects intended; and we now respectfully submit our plan for remedying this crying evil, confident of its successful and beneficial operation.

In the year 1844, the census of New York was taken at 250,000, and in six years after, the unprecedented increase to 750,000; we may at this present year say that it has a population of nearly 1,000,000, equal to two-fifths of the population of London; and with such a ratio of increase, what will our population be in twenty or fifty years? The above will show how much will be required by us to prepare the city for this vast increase of population; and is it not a duty we owe to our children and incumbent on us as citizens, to provide for those who come after us?

We can convince your honorable committee that the plan now proposed by us will be a source of revenue to the city treasury, as the contents of the "receiving basins" can be rented or sold at a price that will in a few years return to the city enough to sweep and cleanse our city from the proceeds, what now costs thousands of dollars for doing badly; as any one can convince himself by a casual glance at our streets, and the stronger appeals to his olfactories.

The manure produced from this source is, as all agriculturists know, the best possible fertilizer of land, and will be eagerly sought by kitchen gardeners and farmers of intelligence. This valuable manure is now allowed to pass into the rivers as worthless, obstructing navigation, detrimental to our harbor, and engendering disease in our city and shipping lying alongshore; we might say as a just punishment for our wanton waste.

The report of the harbor commissioners presented to the Legislature at Albany, in 1857, stated, that "from the amount of soil washed into the



rivers from the sewers and wharves, the result is that within the last ten years, where there was sixteen feet of water, now there is scarcely six feet." And it further stated, "that unless something was immediately done for the commercial interest, by protecting the water tonnage, a serious consequence would result to the best interest of the city, and destructive to commercial enterprise, for want of sufficient water way for vessels drawing over ten feet water.

In these your honorable committee will see the double advantages to be obtained by carrying our plan of "receiving basins" in a sanitary and commercial point of view,—and the cleaning of our city free of charge,—thereby reducing the taxation of this already overburthened city."

#### CULVERTS.

Another source of disease worthy of the committee's investigation, which we would call your attention to, is the imperfect construction of culverts and man-holes to sewers, and also the injection of exhaust steam from factories into sewers, driving the gases out through the culverts and man-hole openings. The noxious effect of this can be tested by holding a dog's nose over the orifice for a few minutes, the animal will become cataleptic.

This exhalation can be prevented by a simple improved arrangement of the culverts, which will cost but a trifling sum.

#### PAVEMENTS.

It is an admitted fact that cities paved with irregular "cobble stones," are more unhealthy than cities paved with regular cubical blocks, a fact which it seems the ancients were aware of. The reasons assigned for this are that in the irregular interstices between the cobble stones, a large quantity of animal, vegetable and other soil is retained, and the lodgment of water from want of a level or even running surface to pass the gutters. These deposits are acted on by our almost tropical sun, generating noxious gases to be inhaled by the denizens of such cobble stone paved streets.

When the traffic of wheeled vehicles in New York, of to-day, is compared with that of ancient cities, it will at once be seen that pavements we admire for their perfect state of preservation after the lapse of centuries, would not have lasted as many years (in New York) as they have centuries.

In view of these facts it behooves the municipal authorities to ascertain and at once adopt the most improved style of pavement, when considered in a sanitary point of view, as well as for its durability.

This desideratum, we contend, is an "*iron tile pavement*," which will cover the entire surface of the street. The present iron pavement now laid down in our city, being of an open pattern, with large vacuities to be filled in with sand, &c., is open to the same objection as *cobble stone pavement*, in a sanitary point of view.

The "*iron tile pavement*," covering the *entire* surface, there can be no receptacle for soil to be influenced by solar action, or ground to impalpable powder to be carried on the "wings of the wind" into the merchant's stores; to his loss he finds the effects, in the damage of his costly fabrics; and what must the human being suffer by inhaling this atomic dust into his lungs, creating pulmonic affections in all their varied forms? Another advantage is, that this pavement can be *swept clean* by hand or machinery, and the streets left as clean as the sidewalk. The surface of this pavement presents sufficient traction for the foot-hold of horses without offering any impediment to the rolling stock. Still another advantage is the facility of laying it down or taking it up when required, and the fact that when worn out, the old metal is valuable.

We respectfully submit that a pavement combining the above mentioned advantages, over all others, merits the attention of your committee.



## MR. ROBERT A. SMITH'S STREET SWEEPING MACHINES.

The committee received the following letter from Mr. Smith :

HON. SMITH ELY JR.,

*Chairman of the Sanitary Committee of the Senate of New York.*

Sir : Understanding that it has been given in evidence before your honorable committee, that the cobble stone pavements, which embrace, with few exceptions, nearly the entire street surface of this city, *cannot be kept clean*, either by manual or machine labor, I beg leave to remark that the streets of New York *can be kept clean*, and make the assertion without allusion to the merits of any particular pavement, whether "cobble stone," "Belgian," "iron" or "Russ." Furthermore, that the streets of the city can be kept clean at an annual cost, *not exceeding* what the city has been paying for street cleaning for the past five years.

Presuming that your honorable committee desire *full* information on this most important of all sanitary regulations, I offer, and will take great pleasure in exhibiting the practical operation of my "street sweeping machines" upon cobble stones, or any other pavements, at any time during the ensuing week, or thereafter, that may suit their convenience.

Yours, respectfully,

R. A. SMITH,  
171 W. 34th St.

NEW YORK, NOV. 10, 1858.

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In compliance with a previous appointment, on Friday, November 26th, 1858, the committee met with Mr. Smith for the purpose of witnessing an exhibition of the practical operation of his street-sweeping machines, as proposed by him. His machines are now used in cleansing Broadway. Their successful operation on Belgian and Russ pavements, and pavements of a smooth surface like them is undenied ; but it seemed to be questionable on the part of some persons, that they would bear a satisfactory test on cobble-stone pavements, it having been alleged that the machines would sweep the dirt into the crevices instead of removing it. On that day the wind was blowing hard, and the streets were dry. A portion of Canal street, between Broadway and Green streets, and of Mercer street, from Canal street to a short distance upwards, (being paved with cobble-stone, were selected for the trial. That portion of Canal street was sprinkled with water so as to convert the dust into mud. After the experiment, Mr. Smith stated that the filth was rendered too liquid.

In sweeping Mercer street, (which was not sprinkled,) the wind blew much of the dust about as it was removed from off the street. Altogether, circumstances were somewhat unfavorable to a fair exhibition of the merits of the street-sweeping machine ; and if the committee were required to decide upon their merits they would have had other opportunities of witnessing their practical operation. But the committee did not conceive that it was their province to render a decided opinion, and hence did not seek such other opportunities. Out of courtesy to Mr. Smith, however, they made and kept the appointment.

Mr. Smith claims that he can sweep all the streets of New York city by his machines as well as they are cleaned now, and at a very great reduction from the amount at present paid for cleaning them.



## STATEMENT OF EGBERT L. VIELE, ESQ., CIVIL AND TOPOGRAPHICAL ENGINEER.

The sanitary condition of any city or district of country is so intimately connected with its proper drainage, and the latter is so dependent upon and governed by the topography of the locality that it would appear requisite that any enquiry into the causes or remedies for sanitary evils existing in the city of New York should be based upon a thorough knowledge of the topography of the island upon which it is built, and I have no hesitation in expressing the opinion that one of the chief causes of mortality is to be found in the defective drainage of certain districts of the city, and furthermore that this is an evil which is increasing as the city extends itself towards the northern portion of the island, and that the main elements by which the evil is increased, are the so called city improvements, or grading of streets and avenues, which are now being carried forward.

To properly understand the position which I assume, it is necessary to bear in mind that the topography of the Island of New York varies from 5 to 150 feet above high-water mark; that between these two limits there is every variety of surface. In some sections the topography is of the most intricate description? abrupt ledges of rock, deep and narrow vallies, sudden upheavals and contortions of the geological formations. Winding along this varied surface, in every direction, are the original drainage streams, one of them of such an extent that it was formerly used for mill purposes.

Now, in laying out the city, the sectangular system of streets and avenues has been adopted, no reference whatever being made to the original topography of the island. The consequence is that the grading of the streets, especially in the upper part of the city, consists of deep rock excavations and high embankments, some of them as high as forty feet. These embankments cross, of course, the old vallies of drainage, through which flows the drainage-stream of a large area. In most instances a few stones are thrown together and called a culvert for the purpose of letting these streams pass under the embankments. A few months suffice to destroy these culverts for the purposes of conductors, and the embankments soon become permanent dams, causing the collection of large bodies of water all over the island, which in mid-summer become stagnant pools, breeding pestilence and disease.

Whenever it becomes desirable to *improve* the lots adjacent to these embankments for sale or building purposes, earth is dumped in to absorb the water which is none the less present because it is not seen. The soil becoming saturated, forms a sort of sponge, through which the water ascends by capillary attraction, giving out a constant miasma, no less fatal to health than the stagnant water which it replaced.

Any system of sewerage, no matter how perfect, would not be a remedy for this evil, for the sewers are but ten or twelve feet below the *grade* of the streets, whilst, as has been stated, in some instances these streams are forty feet below the grade of the streets, being thirty feet between the bottom of the sewer and the water of drainage.

What has been said applies more particularly to the upper part of the island, and wherever buildings have been erected in the valleys filled up as I have described, the tenants of those buildings will testify to the truth of what has been asserted.



But the trouble has not been confined to the upper portion of the city. The existence of the old Collect pond in the 6th ward is remembered by all familiar with New York as it was 50 years ago. This large body of water upon which Fitch launched his first steamboat, was seventy feet in depth. It occupied the site of the present "Halls of Justice," or "Tombs" as it is called, and was connected with the Hudson river by a stream running through what is now Centre and Canal streets. No trace now exists of the pond or the stream, yet the wretched victims who have from time to time been sacrificed to the deadly miasma in the lower cells of the city prison are evidences that the water is still there, although it is concealed from view by the earth which is mixed with it. Further evidence is found in the fact that in this section of the city, it is impossible to have dry cellars. And still further evidence, that since the introduction of Croton water, and consequent disease of the old wells, cellars in the lower part of the city, which were formerly dry, have become wet.

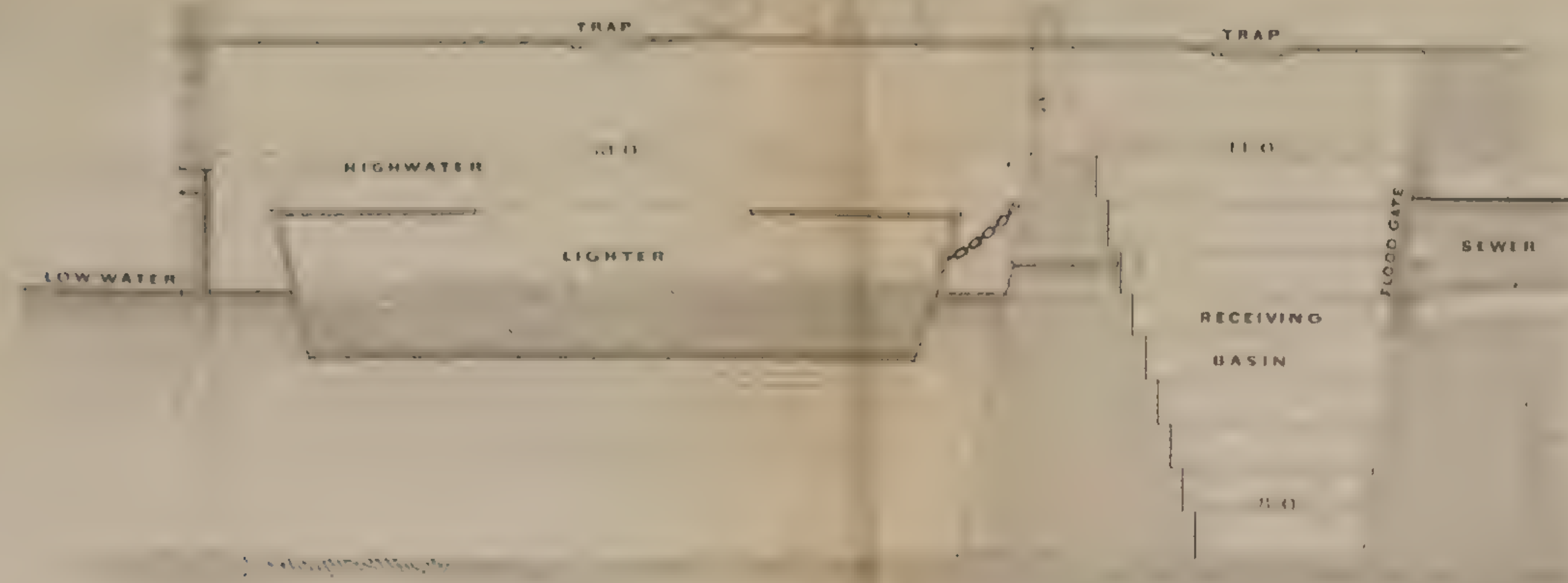
The map accompanying these remarks will serve to convey some idea of the extent of the evil to which the city is exposed, if the subject of proper drainage continues to be disregarded.

The remedy to be applied in the lower part of the city is to widen the narrow streets, and to raise the grade where the streets pass through the original depression of the surface. Narrow streets, under any circumstances, are a curse to a city. They are too generally the abodes of vice and crime. In them an ordinary sickness spreads into a pestilence, and a fire into a conflagration. They are always filthy in summer, and frequently blocked up with snow in winter. They are not fit for business purposes, for they stifle commerce, nor for residences, for they breed disease. Wide streets, on the contrary, are more healthy and cheerful for residences, and more useful and valuable for business purposes. There is less danger from fire, as the flames cannot spread across the street. They are cleaner in summer, and are never impassable in winter. By constructing lateral drains along the slope of the depressions in the lower part of the city, and connecting them with the sewers, they will intercept the water in its descent and prevent its accumulation in the original basins, and then raising the grade, as is proposed in the accompanying profile of Worth street, at the same time widening the streets and perhaps discontinuing some of the short and insignificant streets in the 6th ward, the health of the city will be improved one hundred per cent. So far as regards the upper part of the city, it is absolutely necessary that some system should be adopted for the free flow of water along the channels of the original drainage stream. This can be done by building more substantial culverts beneath the streets, and by the construction of permanent drains, so built as to admit of the percolation of water through the interstices of the covering. These drains should be excavated to a firm substratum, and every property owner should be compelled to construct, of a uniform character, that portion of each drain which may pass through his property.

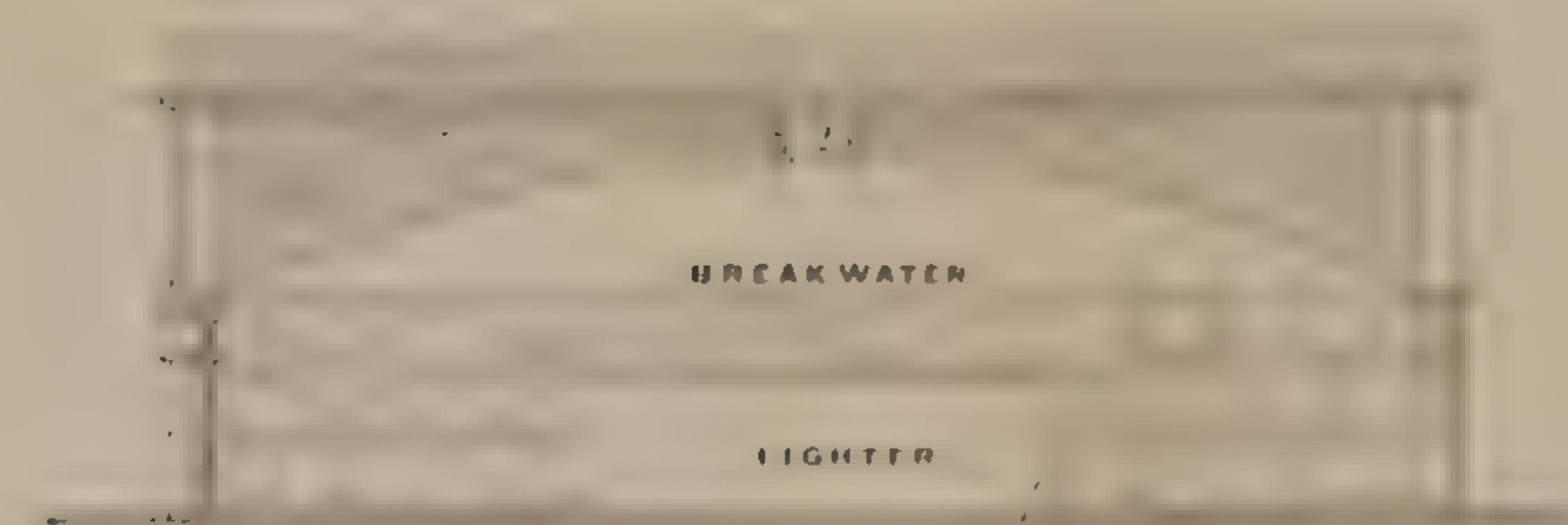
It is folly to suppose that when the city is entirely built upon and the valleys filled up, that no water will find its way into the beds of the original stream. I know to the contrary, and my own experience during a residence in a south-western city while an epidemic was prevailing, was that in all those localities, where there were original depressions in the topography, the disease raged with the greatest violence, although there was no apparent presence of water, or even of moisture in the ground.

EGBERT S. VIELE.



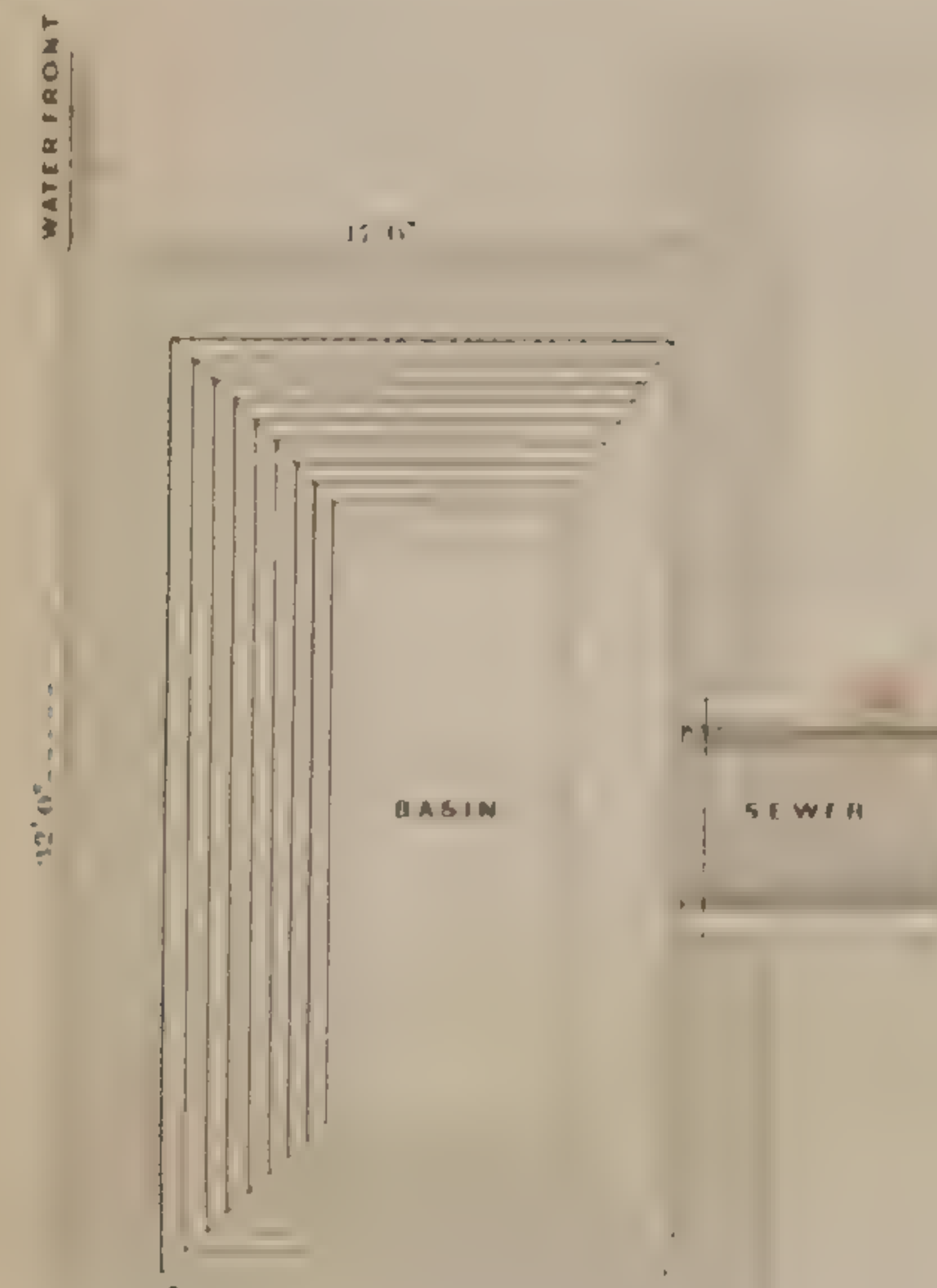


LONGITUDINAL SECTION.



END VIEW.

PLAN OF RECEIVING BASIN



TOP VIEW OF DOCK.

Improved Sanitary arrangement  
OF  
**RECEIVING BASINS**  
AND  
**DUMPING STATIONS**  
At the Termini of Sewers at River Fronts







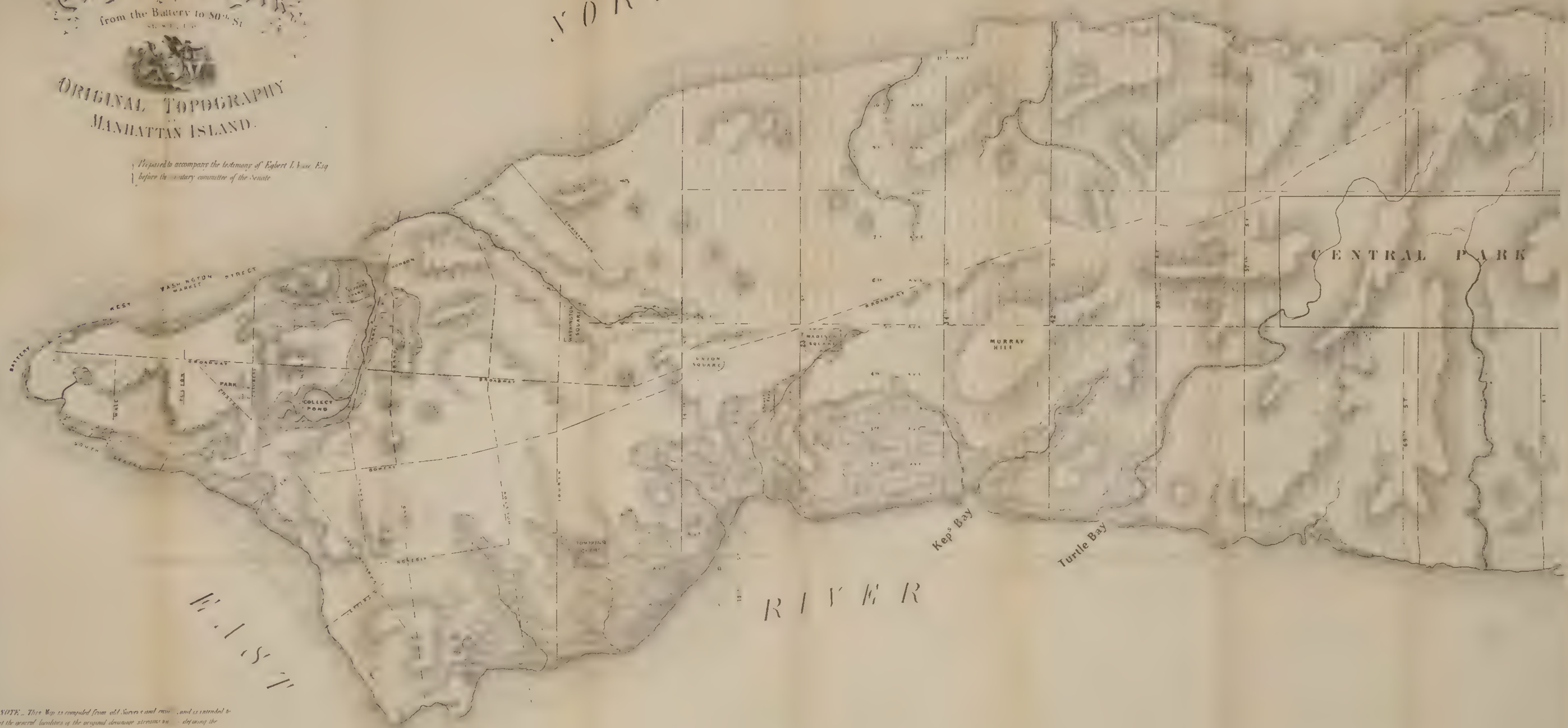
MAP OF THE  
*City of New York*  
 from the Battery to 80th St



ORIGINAL TOPOGRAPHY  
 MANHATTAN ISLAND.

*Prepared to accompany the testimony of Egbert L. Tamm Esq  
 before the Judiciary Committee of the Senate*

N O R T H R I V E R



H I S T

R I V E R

*NOTE - This Map is compiled from old Surveys and maps, and is intended to exhibit the general boundaries of the original drainage streams and defining the precise points at which they would intersect the Streets and Avenue*

Corlear's Hook



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His Honor, Mayor Tieman, was invited to appear before the committee, and several adjournments were made to suit his convenience; but instead of giving testimony before the committee, he met the chairman, Hon. Smith Ely, Jr., and had several private interviews with him upon the subject of the sanitary condition of the city, and the best means of effecting an improvement therein. Whatever valuable suggestions he made, are embodied in the report.

Being convinced that they had already accumulated a sufficient amount of testimony, on Friday, December 10, 1858, the committee adjourned *sine die*.

















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